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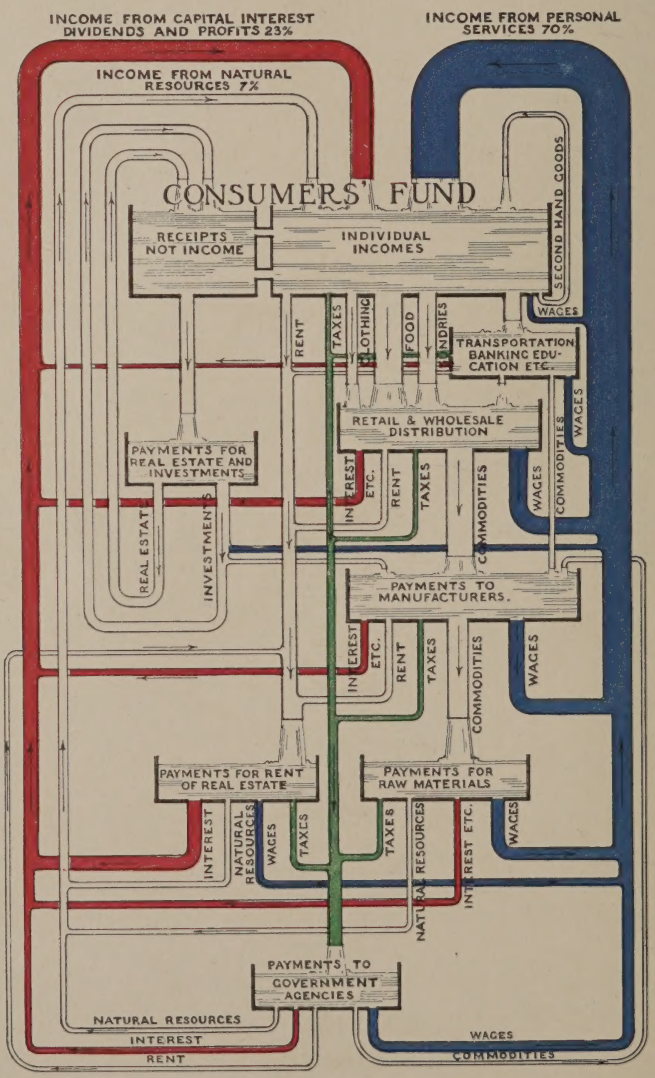
PUBLICATIONS
OF THE POLLAK FOUNDATION FOR
ECONOMIC RESEARCH

NUMBER TWO

MONEY

THE CIRCUIT FLOW OF MONEY



POLLAK FOUNDATION

MONEY

BY
WILLIAM TRUFANT FOSTER
AND
WADDILL CATCHINGS

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PREFACE

THE Pollak Foundation for Economic Research welcomed the opportunity to publish, as its first volume, Professor Irving Fisher's *The Making of Index Numbers*, because the first need of the science of economics appears to be accurate and generally accepted instruments of measurement. In this second volume, we venture upon a preliminary discussion of money, because money, which is our best measure of the strength of economic motives, should be made the core of economic theory, and because more of the world's difficulties are due to monetary policies than to any other economic cause. In any event, this is a good time to study the subject. It seems likely that the era of monetary chaos through which we are passing will become the classic example of unsound public finance.

An understanding of the part that money plays in the world is prerequisite to a solution of the most critical problems of our day, national and international. Such an understanding requires a knowledge of those attributes of a money economy that make it essentially different from a barter economy. Failure to take this difference fully into account appears to be at the root of various popular fallacies. Even our textbooks insist, as a rule, that "all trade is, of course, barter," and that "the young economist must do exactly as Solomon and Hiram did — think in goods." With attention fixed on goods rather than on money, however, the economist, young or old, is in danger of overlooking those aspects of modern production and distribution, particularly the unbalancing of supply and demand, that have most to do with the periodic ups and downs of business.

Indeed, it is obvious facts and indisputable conclusions that are most frequently overlooked. For that reason, we have not hesitated to deal at length with various propositions that we are well aware will be regarded by some readers as tiresome platitudes. That the world can consume, in the long run, no more than it produces; that standards of living depend on sustained production; that production cannot be sustained at a high level without a medium of exchange; that gold is the most satisfactory basis for a medium of exchange; that central banks should be free from political pressure; that monetary reforms are impossible as long as governments meet their deficits by printing money; that sharp fluctuations in price-levels lead to disastrous results; that competition among consumers rather than governments should control prices and production: these are among the commonplaces of sound thinking that the war-wracked world of to-day disregards to its sorrow.

"The money fallacy," said Simon Newcomb, many years ago, "is periodic, overwhelming us, not at regular intervals, but from time to time, owing to the influence of changing events. The Americans, more than any other people, have been its victims." And now, as a natural aftermath of a world war, we are beset on every hand with proposals for reforming the entire economic order. Most of them blithely ignore what money does, and just as blithely assume that money does, or can be made to do, what it cannot possibly do. To offer another panacea for social ills is no part of our purpose. This is fair warning. The reader who is bold enough to venture beyond this preface into the discussion of a subject that has long been regarded as one of the dullest parts of "the dismal science" will do well to heed this warning. Otherwise, after reading all that the volume offers, he may cry impatiently:

"Well, if all this is true of a money economy, have you nothing more to offer by way of constructive proposals?" In subsequent studies, based in part upon this volume, the Pollak Foundation expects to have something to say in answer to that question. It hopes thereby to be of some help, at least, to the various economic agencies, happily increasing in number, that are now endeavoring, on the safe basis of fact and reason rather than on the hopeless basis of prejudice and passion, to hasten the day when money — with its purchasing power protected against excessive fluctuations — will do more to promote and less to hinder the work of the world.

The following pages, however, are only introductory — an indispensable groundwork, we believe, but nothing more. It goes without saying that a discussion of all aspects of the topics we have touched upon — the rate of interest, the function of price, the circuit velocity of money, to go no further — would take us far beyond the confines of this volume. Here we have dealt only with some of the larger aspects of monetary phenomena, the significance of which appears to be overlooked at times in discussions of business problems and reform programs. Later on, we may discuss certain refinements and qualifications.

For the present, we shall be content if the reader agrees with us that all proposals for changes in the established order, no matter from what source they arise, must be discussed in the light of the characteristics here outlined of an industrial society based upon the exchange of goods and services for money. This much is fundamental. In so far as our exposition is erroneous, it must be corrected; but in so far as it is sound, it must be accepted as the admitted matter upon which constructive programs will have to be based. If all reformers proceeded from such

safe ground — if they were wise enough to distinguish what they know from what they do not know, and to insist on knowing how things really are, and why they are as they are, before launching a campaign for changing them — the world would be spared much strife and false accusation and bitterness and wasted effort.

The authors are grateful to all those who have read parts of the manuscript. Especially helpful have been the frequent criticisms by Hudson B. Hastings of the Pollak Foundation, and the suggestions offered, from time to time, by Irving Fisher, Wesley C. Mitchell, Gilbert H. Montague, Malcolm C. Rorty, John E. Rovensky, Martin J. Shugrue, Carl Snyder, O. M. W. Sprague, and Paul M. Warburg. Particular acknowledgment should be made of the indispensable services of Edith McDonald of the Pollak Foundation. Some of the chapters are in part reprinted, with the kind permission of the publishers, from papers that appeared during 1922 in the *Atlantic Monthly*, the *American Economic Review*, the *Annalist*, and *The Saturday Evening Post*.

As footnotes, "like little dogs barking at the text," annoy many readers, we have corralled all the little dogs in the Appendix, where they can be found easily enough by any one who wants them.

WILLIAM TRUFANT FOSTER
WADDILL CATCHINGS

NEWTON, MASSACHUSETTS
January 1, 1923

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MONEY

CHAPTER 1

MONEY A CENTRAL INTEREST OF LIFE

PERIODICALLY, our economic system becomes the spectacle of unemployed men who are able and eager to work; abundant tools to work with and materials to work upon; and a nation in need of the goods that these men, by the use of these idle machines, might make out of these surplus materials. Yet, month after month, the men and machines and materials are not brought into productive relations with each other. In the United States, for example, during the year 1921, there were millions of men, women, and children in need of food, clothing, shelter, and innumerable other products of labor. At the same time there were vast stocks of unsold, finished goods awaiting consumption, warehouses crowded with raw materials, factories and machines ready to do their part in production, larger possibilities of currency and bank credit expansion than ever before, and several millions of idle men and women who were eager to go to work. Yet there was sustained business depression. The economic organization of society had again fallen short of fully serving its one great purpose — the production and distribution of goods.

Great Losses are due to Periodic Business Depressions

The extent of the economic loss due to these recurrent depressions can be seen at a glance. In Figure 1, the line

between the dark area and the light area indicates fluctuations in the state of business activity in the United States from 1877 to 1922.[1] The light area represents roughly the volume of production and employment: the dark area represents roughly the volume of unemployment and consequent loss in production. If the entire period had been as prosperous as its best years, the entire area would be white. In other words, if business had been sustained at the level which it has actually reached from time to time, the economic loss represented by the dark area would have been avoided.

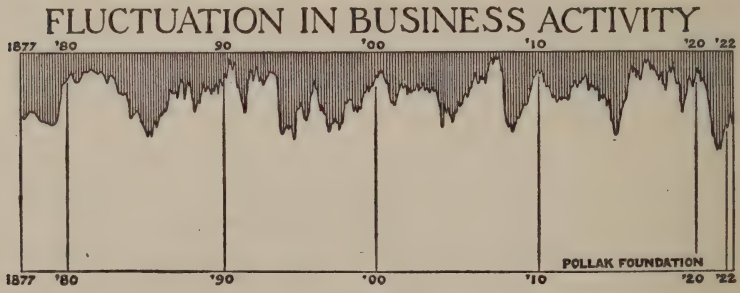

FIGURE 1

The magnitude of that loss may be comprehended even more readily by means of a few comparisons. The loss is greater than the combined national incomes of Canada and Japan. It exceeds the total expenditures for education in the United States. It is far greater than the annual income of all our millionaires. If the total income of this group had been distributed among the wage-earners, and even if this had not caused a further falling-off in production, such a distribution of national income would not have made up for the loss to wage-earners due to industrial depressions. Indeed, the 250,000 persons in the

[1] All the footnotes will be found, chapter by chapter, in the Appendix.

United States who have the largest incomes — and this includes all those who have annual incomes of over ten thousand dollars — do not receive an amount equal to the loss shown in the dark area — a loss due to our failure to keep business going at the rate which we have already demonstrated is a human possibility, with human beings as they are.

To "the man in the street," this whole situation is bewildering; and nearly every one in our day is a "man in the street," as far as economics is concerned. Even the ablest of our leaders in business and in finance and the most competent of our professional economists offer only partial and tentative analyses of these recurrent periods of depression and consequent suffering. None of the explanations are entirely convincing, and the best of them are unsatisfactory even to their authors.

Now, since ours is a money economy, and since it is therefore almost exclusively through the use of money that productive relationships are maintained, as far as they are maintained at all, among men, machines, and materials, the question naturally arises to what extent the characteristics of money are responsible for industrial depressions. In the United States, at least, other explanations do not carry us very far. In many countries, there are economic difficulties due to density of population, lack of natural resources, devastated areas, loss of man power, unstable government, adverse climatic conditions, widespread illiteracy, and unprogressive methods of production and distribution. To none of these causes can we ascribe the plight of our own country in 1921. We had plenty of resources, human and material: we seemed to lack only the means of using them — placing the men where they could go on with the world's work, moving the raw products to factories, the finished products to dealers,

and thence to people who wanted to use them. Had not something happened to our medium of exchange? At least the question seems worth studying.

Human Interests tend to gravitate around Money

For better or for worse, we live in a pecuniary society. Money has come to be as necessary in the exchange of goods as language in the exchange of ideas. We might carry the analogy further: so difficult is it to make words serve the purpose of conveying thought, that it sometimes seems as if the function of language were to obscure thought; and so difficult is it to make dollars serve their purpose of carrying on trade, that people have wondered at times whether the function of money were not to obstruct trade. The economic world of to-day, however, could not exist without money. Nothing approaching the present world production would be possible without division of labor, and nothing approaching the present division of labor would be possible without a medium of exchange. "Without trustworthy money," says H. G. Wells, "Europe is as paralyzed as a brain without wholesome blood. She cannot act. She cannot move. Employment becomes impossible and production dies away. Our civilization is, materially, a cash and credit system, dependent on men's confidence in the value of money."

The effects of mistaken monetary policies are passed on from generation to generation. "It may be doubted," says Macaulay, "whether all the misery which had been inflicted on the nation in a quarter of a century, by bad kings, bad parliaments, and bad judges, was equal to the misery caused in a single year by bad crowns and bad shillings." The Government of France, during the French Revolution, with its deluge of inconvertible *assignats*, did more harm to industry in a single year than stupid and

irresponsible monarchs had done in a century. "Commerce was dead — betting took its place." And in our own generation the Bolshevist destruction of the currency appears to have caused more suffering than all the tyranny of the Czars of Russia. It is, in fact, almost exclusively through the medium of money that various causes operate to injure or promote the economic well-being of society.

Our modern economic life is founded on money. Our whole industrial order is based on production of goods for sale at a money profit. The economic value of virtually everything, except consumers' goods already in the hands of consumers, is based on the expectation that it can be sold for money, or will have a part in producing something that can be sold for money. In our warehouses, factories, shops, and stock-yards are vast stores of wealth — apples and amethysts, beets and barrels, carriages and cattle, and so on to the end of a list that, in its detail of grades, sizes, and styles, would outrun the pages of the biggest dictionary; and in all these multifarious things the owners have one common, dominant interest, namely, to exchange them as soon as possible for the largest possible amount of money. Services as well as commodities compete in price markets; human success is measured mainly by salaries and wages; individual initiative is rewarded mainly in terms of money.

Now and then, to be sure, we read in newspapers about a minister who declines to accept a larger salary, a contractor who does public work without desire for profit, or a young idealist who scorns a legacy of a million dollars; but these cases appear in the headlines because they are news. A great editor once said to his reporters: "If a dog bites a man, that is nothing; but if a man bites a dog, that is news." When money is not a dominating influence in

everyday affairs, that is news. Health, knowledge, serenity, honor, reputation, love — these are exalted joys in life, no doubt, that cannot be bought: and yet it is probable that no one is fully aware of the subtle and far-reaching pecuniary influences that have their part even in those life interests that are often thought of as without money and without price. More and more intensely, more and more generally, and over a wider and wider area, men and women are concerned with the problem of exchanging their products or their services for as much money as possible, or with the equally engrossing and insistent problem of obtaining as much satisfaction as possible for the money they have to spend. In short, human interests, ambitions, and activities tend to gravitate around money.[2]

This was not the economic order of the remote past, and it may not be the economic order of the distant future. It may or may not be the best conceivable basis upon which to produce, exchange, and consume goods; but since it is largely the result of human characteristics that have been taking root since prehistoric times, we are not likely to make much progress unless we take due account of these deep-rooted fundamentals of the present order. It seems certain, therefore, that no one can solve our economic riddles who does not understand the economic meaning of money. It seems equally certain that misunderstanding of the function of money — what it can do for us and what it cannot do, what can be and what cannot be charged to its account — will lead to futile projects for social reform, political blunders, misdirected condemnation, discouragement, ill-will — in short, worse than wasted human efforts.

Such seem to be the recurrent attempts to cure our industrial ills by increasing the supply of money without increasing the supply of goods; by basing our currency

on labor-hours or on energy units rather than on gold; by fixing prices and interest rates through government fiat rather than through competition; by promoting a thrift campaign and a buyers' week at the same time; and by seeking to increase our exports, but refusing to take anything but gold in return — projects to be considered presently. As a result of the notion that monetary problems require no serious study, we are certain to have frequent attempts to settle currency questions by popular vote.

The Function of Money is often regarded as Insignificant

It is too much to expect that a knowledge of the characteristics of money will prove an adequate explanation of all that goes on in business. Such a knowledge is, however, an indispensable groundwork for any profitable discussion of the subject.

Yet the rôle that money plays in the world's work, apart from its obvious convenience, has not been adequately dealt with. Most writers have held too literally to those passages in the writings of John Stuart Mill which seem to belittle the function of money. "Great as the difference would be between a country with money and a country wholly without it," said Mill, "it would be only one of convenience. . . . There cannot, in short, be intrinsically a more insignificant thing in the economy of society than money, except in the character of a contrivance for sparing time and labor." [3] For decades this idea has been passed along from writer to writer, usually without critical consideration, in spite of the fact that, since the time of Mill, the development of bank credit has given money a far different rôle in the economy of society. The four universally proclaimed uses of money — as a medium of exchange, as a measure of value, as a store of

value, and as a standard of value — appear to have been taken for granted without the rigorous, quantitative examination that such important functions deserve.

Beyond the historic view of this fourfold advantage of money, to be found in nearly all treatises on the general principles of economics, there has not yet been any adequate discussion of the results of the change from a barter economy to a money and credit economy. Most writers have been content to follow Mill in assuming that, apart from its convenience, money has little to do with the world's work. Even Jevons saw no place for money among the fundamentals of economic theory; in his view, money belonged to "the higher complications of the subject." [4] And the Dean of the School of Commerce, Accounts and Finance, of New York University, declares that economists still "consider the problems of interest, profits, and wages, the whole theory of the production, exchange, and distribution of wealth, as if money were not used at all, it being assumed that the introduction of money as a medium makes no difference in results." [5] Some modern writers follow Mill in stating explicitly that money has little further significance. Apparently they think of money only as *facilitating* the production and exchange of goods. Usually no account is taken of the ways in which money can obstruct business, as well as the ways in which money can facilitate business.

In general treatises, we frequently meet such sentences as the following. It goes without saying that there is truth in these quotations: it also goes without saying that single sentences, apart from the context, do not in every case fairly represent the views of the author. Taken as a whole, however, these quotations do represent the traditional emphasis in the treatment of this subject.

"One of the greatest of all labor-saving devices is money." [6]

"Money . . . serves as the general instrument of exchange, as a measure and medium in the sale and purchase of other commodities, and as a common denominator in comparing values." [7]

"Money is simply one kind of wealth which is taken, not for itself, but to pass along." [8]

"Credit is a means to the end of larger production and is therefore itself productive." [9]

"Money is a tool which easily enables persons to exchange their services or their products." [10]

"Aristotle says that 'as the machinery [of barter] for bringing in what was wanted, and of sending out a surplus, was inconvenient, the use of money was devised as a matter of necessity. . . .' The few and simple words with which Aristotle has treated this subject cannot be bettered." [11]

"A means by which capital can be given mobility and thence greater efficiency." [12]

"Money is merely a great convenience in the process of making exchanges." [13]

"The credit system facilitates exchange." [14]

"Money is in reality nothing more than a medium for exchanging one kind of goods for another kind, and, after all, the fundamental form of exchange is barter. . . . Recourse has long ago been had to a process of complex barter. . . . The final outcome is, however, nothing more than the exchange of goods for goods." [15]

Such statements, repeated over and over again, and reiterated even in the present era of bank credit, divert attention from what may well prove to be a fruitful field of economic inquiry. They make money appear, on the contrary, as a matter of mere convenience — always a

convenience — rather easily understood, and not particularly worthy of study. If a money economy has important characteristics, other than those mentioned above, which do not pertain to a system of barter, few would suspect it from reading scores of books which purport to cover the principles of economics. An examination of twenty-five books, reserved in a university library for students in the general course in economics, fails to reveal any hint that money may obstruct the production and exchange of goods — any hint that there are unsolved monetary problems of the first magnitude.

Objections are raised, moreover, to any tendency toward making money the central theme of economic theory. Leading articles in recent numbers of the *American Economic Review*, the journal of the American Economic Association, are devoted to belittling the function of "price economists." Dr. Wesley Clair Mitchell's idea that money should be the center of economic study, that it clarifies, simplifies, and makes the study more realistic, more useful, and more profound, "is rejected," says Dr. Frank A. Fetter, "by nearly every one who examines it." [16] For men to make money the center of economic studies and, at the same time, to be concerned primarily with human welfare, seems to many writers impossible.

Knowledge of Money is a Groundwork for the Study of Business

Nevertheless, our difficulty in accounting adequately for what is going on in industry, and what is failing to go on, calls insistently for more extensive and exacting studies of money than have yet been made. Surely the study of social welfare would lead to more dependable programs of reform, if it were based on a more accurate knowledge than we now possess of actual economic processes. "While

the understanding of these processes," as Dr. Mitchell rightly says, "has been the chief aim of economic investigation for a century, no one fancies that this fundamental task has yet been adequately performed. In the interests of social welfare itself, we need clearer insight into the industrial process of making goods, the business process of making money, and the way in which both sets of activities are related to each other and to the individual's inner life. Into our conjoint attack upon these problems, a clearer recognition of the rôle played by money promises to bring more definite order and more effective coöperation. It helps us to formulate our tasks in ways that suggest definite things to try next." [17] Professor Alfred Marshall, of Cambridge University, goes further still: he expresses doubt whether there can be any science of economics at all without money, or public honors meted out by graduated tables, or some other measure of the strength of motives that would prove to be as convenient and exact as money.[18] Pareto expressed similar views. Evidently, we cannot appraise the part played by money in the world's work until we have more definite knowledge of the exact ways in which money creates or makes possible our modern economic achievements and difficulties.

But we cannot reach this distant goal until we have first taken fully into account the characteristics of money. A study of this subject — which is the central theme of the following chapters — is prerequisite to an understanding of the ups and downs of business, and, indeed, of economic and social problems generally. Incidentally, we shall find that the change from barter to money, far from being a mere matter of convenience, has been fraught with such far-reaching consequences that some of the traditional economic principles, based as they usually have been upon a world of barter trading, do not apply to the cur-

rency and credit trading world of to-day. John Stuart Mill declared that money "obscures, to an unpracticed apprehension, the true character of industrial enterprise." And Basil Brackett, of the British Treasury, reports King Solomon as saying in an imaginary conversation that thinking in terms of money is the root of most of our evils. Undoubtedly there is wisdom in this remark — considering the cloudy character of our thinking. But the way to clarity is not through ignoring money and focusing attention upon goods, as we are often adjured to do. On the contrary, the assumption that money is merely a matter of convenience, of only superficial significance, appears to have obscured the true character of commercial operations, delayed our discovery of the ways in which the economic order is periodically deranged, and in general impeded the progress of economic science. After we have examined some of the consequences of the change from barter, the question may seem pertinent whether there can be intrinsically a more *significant* thing in the economy of society than money.

At least we shall then be in a better position to consider the conclusion of R. G. Hawtrey that "the trade cycle is a *purely* monetary phenomenon." [19] Indeed, it seems probable that if we knew enough about the characteristics of money and took all these characteristics duly into account, we should see many other contemporary problems in an entirely new light. What would be the effect on business in the United States, for example, of the cancellation of our foreign debts? What would be the effect, on the other hand, if these debts were paid in gold? What, if paid in goods? Under what circumstances is the payment of dividends by corporations good for business as a whole? What is the effect upon business of the policies of corporations with respect to undivided profits? Exactly

what kinds of thrift are good for business and under what circumstances? To what extent, if any, can workers as a body increase their real wages by forcing increased money wages? By what means can the products of industry be more equitably distributed? Do present methods of financing business lead inevitably to crises? There is no discussion of money that is sufficiently comprehensive and accurate to serve as a basis for answers to such questions as these.

Nevertheless, we may yet find answers, for there is no inherent reason why we should not understand the relation of money to business. Money and its operations are not occult or mysterious. The materials with which we have to deal are nearly all in plain sight: on the one hand, the pieces of metal and paper which constitute our money; and, on the other hand, the sacks of meal, rubber tires, phonographs, and so forth which money somehow either helps or hinders us to make and to move into the hands of consumers. On both sides, we are concerned with tangible things, the counting and tabulating of which are difficult, to be sure, but not impossible. We are not dealing with the stuff that dreams are made of; nor are we baffled by hidden and wholly unknown factors, as we are in the search for the cause of cancer. The physical aspects of money and goods, it is true, are not the only factors of our problem: we must also take into account mental attitudes toward money and toward goods. But even these difficulties do not seem insuperable: our task has more to do with applying to monetary problems what we already know about mental processes than with discovering a new body of psychological truth; in any event, more to do with objective behavior in business transactions — behavior which can be studied as a mass phenomenon recorded by statistics — than with subjective mental

processes. This is one of the problems in connection with which economists have more to contribute to psychology than to borrow from it. "The elementary principles of the subject," as Jevons said half a century ago, "are not of a complex character: and if we hold tenaciously to these principles, we may perhaps be saved from that dangerous kind of intellectual vertigo which often attacks writers on the currency."

CHAPTER II

MONEY AND OTHER TERMS DEFINED

At the outset, we shall do well to define the terms with which our discussion is mainly concerned. Many controversies are futile because neither side knows exactly what the other side is talking about. This seems particularly true of monetary questions. "No subject in political economy," says Dean Johnson, "is to-day more fruitful of controversy and misunderstanding among economists, and none seems more cloudy and confused in the popular mind." [1] Some of the controversies between "welfare economists" and "price economists" are perhaps cases in point. At times, disputants think they are in accord on principles, merely because their disagreement is hidden under ambiguous language. At other times, they think they disagree fundamentally concerning ideas, merely because they are confused concerning the meaning of words. Disputes which seem interminable are sometimes ended abruptly and happily upon the accidental discovery that the disputants agreed all the time as to the questions really at issue. Careful definition of terms helps to make such discoveries prompt rather than belated, scientific rather than accidental.

Political economy, or economics, as we prefer to call this branch of social science, stands in special need of these precautions because it has only a meager, technical terminology that is peculiarly its own. Exactly what do we mean by consumption, demand, credit, money, wealth, price-levels, profits? These are familiar words of everyday speech: nobody hesitates to use any one of them for fear that he may not have a clear and accurate idea of its mean-

ing. Terms that are equally familiar to the engineering profession, such as the moment of inertia and the radius of gyration, most of us do not attempt to use at all. We know that we do not know what they mean. Various other professions have a similar advantage over economics; their terminology makes it evident that hard study is prerequisite to any sensible discussion of their problems. Most people do not talk glibly about torts or spectrum analyses. About money, however, many people take it for granted that they know all they need to know, since their daily dealings are in terms of money. For this reason they are in special danger of concluding that whatever they do not agree with on this subject is wrong and whatever they do not understand is nonsense.[2] Economics might fare better if it had a forbidding vocabulary of its own, freed from the confusion of everyday speech.

Since it has not, we shall devote this chapter to an exposition of the terms that are most commonly used in succeeding chapters. For our present purposes, we do not ask any one to accept these definitions. All we ask is that those who persist beyond these dull preliminaries will bear in mind that all these terms are used consistently throughout the volume in accordance with these definitions. General agreement in the use of economic terms would be a great convenience; but it is not a necessity. In order to arrive at sound conclusions, we need nothing but true premises and valid reasoning. Logically, therefore, it is of no importance how we define money or any other term. The essentials are that our definitions shall be clear and definite and that our use of terms shall be consistent throughout with our definitions.[3]

Economics defined

Economics, as we shall use the term in connection with

the money economy of to-day, is the science that deals with human interests from the standpoint of price. This definition covers not only the production and distribution of goods and services, but all other human interests, in so far as they are measured in terms of money. Although this may seem to be too broad a definition, the usual definitions are much broader. They are too inclusive to mark off the field of economics as a science. It has been defined, too broadly for our purposes, as "the study of the material world and of the activities and mutual relations of man so far as all these are the objective conditions to the gratification and to the welfare of men." This takes us far into the extensive domain of sociology. Too inclusive, also, is the definition of economics as the science that "deals with those activities of man which are devoted toward securing a living." This is broad enough to cover large areas of the fields of chemistry and physics. Objectionable, in the same way, is the concept of economics as "a body of principles which govern the practice of economy in its broadest sense." The fundamental characteristic of every science is a close approximation to exact measurement. Each science is known by its point of view and its consequent units of measurement. Mechanics measures an engine in terms of horse power, and dietetics measures an egg in terms of calories; while economics measures both engines and eggs in terms of dollars. Without such a measure, there would be no science. For this reason, we consider money the central and unifying feature of the science of economics.

Money defined

By "money" economists usually mean anything that is (1) passed from hand to hand throughout a community in payment for commodities and services, and (2) regularly taken with the intention of offering it in payment to

others, and (3) customarily received without assay or other special test of quality or quantity, and (4) received without reference to or reliance upon the personal credit of the one who offers it. To cover all this, we shall use the term "currency."

The term "money" we shall use throughout our discussion, in accordance with the everyday practice of business men, to cover not only all forms of currency, but bank credit as well. By "bank credit" we mean deposits transferable by check. It is important to bear in mind, in connection with all that follows, that the term "money" is always used as synonymous with "circulating purchasing power," and always includes both currency and bank credit, as defined above.

Things that serve the Purposes of Money

From the standpoint of business, money interests us chiefly in so far as it aids in producing goods and moving them to consumers. Anything at all which performs that work has much the same major effects upon industry as though we called it money. And so, in connection with all the more important aspects of the world's work, no matter how we define "money," we must take into account everything that serves the purposes of money. Otherwise, we shall be in constant danger of overlooking some of the factors that determine prices and production and, in general, the state of business activity. Liberty Bond coupons, for example, in so far as they serve as currency, must be dealt with as though they were money in circulation. We can safely ignore them only if, for the purpose at hand, the volume of coupons used to transfer goods is small enough to be negligible. The same is true of various other media of exchange, not included in our definition of money, which sometimes serve the purposes of money.

For this reason, we must take into account another kind of credit, namely, that allowed by dealers to their customers. This we shall call "book credit." Book credit is the deferring of a payment of money. A man accepts book credit when he postpones the payment of a debt that is due to-day, and he extends book credit whenever he permits any one to postpone a payment that is due to-day. Although this kind of credit is less important than bank credit, it must, nevertheless, be taken into account in connection with any study of business fluctuations. For a while, it moves goods without the use of money. The failure to make allowance for book credit, as we shall see later on, leads frequently to fallacious reasoning concerning the relation between the money and the goods that change hands within any given period of time.

Money in Circulation defined

Money is in circulation, in our use of the term, as long as it is available for expenditure. The unused lending power of banks is not money in circulation, for it is not available for expenditure: it becomes money only through the joint act of a bank and a borrower. The lending power of banks is like gold in the mines; it is not money until somebody puts it where it can be used as money. All bank deposits are money in circulation, no matter what proportion of these deposits are checked out within any given period of time; just as all coins in people's pockets are money in circulation, no matter how many of them are spent on any given day. In a certain sense, it is true, all money is idle except when it is actually being used in exchange; but in that sense only one dollar out of several thousand is active, and all the rest are idle, in any given minute. It is only a matter of convenience which conception we employ. Either, if used consistently, leads us to the same conclusions as the other.

Money versus Wealth

In two opposite ways, money has been a source of confusion to economic thought. First, men attached to money a kind of importance which it did not possess. They regarded money as a kind of national wealth which, like any other kind of national wealth, increased in value as its quantity increased. Later, after the fallacy of this first position had been exposed by economists, money came to be regarded by many people as relatively insignificant. And then, mainly through the extensive development of bank credit, money achieved a far greater significance in the economic world than ever before. Thus, at first because its importance was overestimated, and later because its importance was underestimated, money has proved to be an historic stumbling-block in the way of an understanding of economic processes and results.

It is important to keep in mind the distinction between money and other forms of wealth. From the standpoint of an individual, money is regarded as wealth, for it is a command over the objects of wealth. The more money an individual has, the better off he is, economically. It is not true, however, that the more money a nation has, the better off it is. The material wealth of a nation is its wheat, factories, railroads, mines, forests. From the communal standpoint, money is wealth only in so far as it is made of metal, which is wealth as such. This means that, for the individual, money is suspended purchasing power, a fact that we shall undertake to show is of the utmost importance to business. For the nation, however, money is suspended purchasing power only in so far as it is made of metal which will be accepted outside the country, on a barter basis, in exchange for goods.

This may seem too simple to need emphasis, but, as a

matter of fact, it is not at all easy to rid the mind of the idea that an increase of money is necessarily an increase of national wealth. If a man has ten dollars in his pocket, and his Government has not been playing fast and loose with its currency, he rests secure in the thought that those dollars mean for him a fairly definite quantity of potatoes, shoes, or tobacco, which is certainly real wealth to him. Except as noted, however, money is not wealth, and it is not even converted into wealth when it is spent for goods. It is merely used as a measure of command over wealth and a means of exchanging wealth; and the one who receives it uses it in the same way as a measure of his command over other people's wealth. Various popular fallacies — those, for example, having to do with overproduction, and with the favorable balance of trade — are due, as we shall endeavor to show later on, to the confusion of money and wealth.

After the World War, the illusion of wealth due to inflated money continued. By borrowing during the War, England added about forty thousand millions of dollars to the wealth of the nation — as wealth is tabulated in official reports and usually thought of by the people; but it added no material wealth. On the contrary, the nation as a whole exchanged vast stores of real wealth — machines, ships, chemicals and so forth, used up in the War — for paper evidences of debt. This paper is nothing but a kind of claim of some people on a part of the future production of all the people. No laborer would consider a claim on that which does not yet exist, and which he, himself, must produce if he is ever to enjoy it, as present wealth. Yet national bookkeeping invites the people to make precisely that error. Monetary complexities obscure the fact that no system of bookkeeping can be devised, either for individuals or for nations, which

can transform future money obligations into present real wealth.

Prices versus Price-Levels

Throughout our discussion, we must take special pains to keep in mind the distinction between individual prices and the general price-level. By individual prices, we mean the exchange value of any commodity — say a ton of coal or a barrel of flour — in terms of dollars. By the general price-level, we mean a composite of all prices; that is to say, the cost of coal, flour, and everything else at one time or place compared with the cost of the same things at another time or place. We shall try to make clear that the paramount interest of every community in the price-level is clear and simple: where the price-level happens to be is of minor importance; the major need is that it should stay where it is. The interest of the community in individual prices — that is to say, in the relation of prices to each other on a given price-level — is not so obvious. That is to be the subject of the eleventh chapter.

Currency in the United States

Currency in the United States consists of gold coin, silver dollars, paper money, and convenient amounts of so-called subsidiary money — half-dollars, quarters, dimes, nickels, and pennies. The increase in the volume of currency since 1800, compared with the increase in population, is shown in Figure 2.

The volume of gold coin fluctuates in amount with the production of gold, and with the export and import of gold, for any one owning gold bullion may at any time obtain from the United States Government the corresponding amount of gold coin, and any one owning

gold coin may obtain the corresponding amount of gold bullion.

The volume of silver dollars sometimes fluctuates with changes in the currency laws. In 1922 there were about 400 million silver dollars, in the Treasury or in circulation, and under the existing law this amount could not be

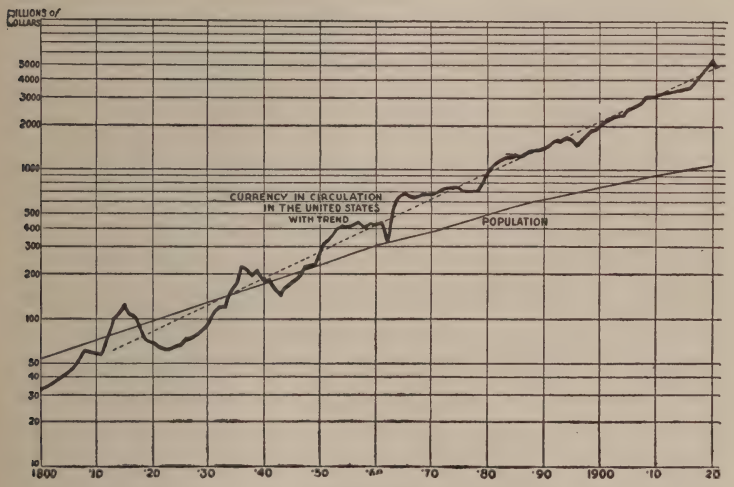

FIGURE 2

more than about 600 million dollars. There is no reason to convert silver dollars into bullion, for as bullion the silver in a dollar is not worth a dollar. Paper money consists of gold and silver certificates, United States notes, United States Treasury notes, National Bank notes, Federal Reserve Bank notes, and Federal Reserve notes. Each gold certificate represents a corresponding amount of gold in the United States Treasury, and the certificates are exchangeable for gold, and gold is exchangeable for certificates. Likewise, silver certificates represent actual silver dollars in the United States Treasury and are ex-

changeable for these dollars; and silver dollars may be exchanged for silver certificates.

For many years, there have been $346,681,016 of United States notes, and under the law this amount remains unchanged. Against these notes there is a gold reserve of approximately $150,000,000. When these notes are redeemed, they are reissued. United States Treasury notes were issued to pay for silver purchased under the Act of July 14, 1890. The amount of these notes has been reduced by the coinage of silver dollars, until to-day it is only approximately $1,500,000.

National Bank notes may be issued at any time, by any National Bank, in any amount not exceeding at any one time 125 per cent of the amount of the capital and surplus of the bank. When these notes are issued, the issuing bank must deposit, with the Treasurer of the United States, United States Government bonds at par, or at market price if this is lower, to the full amount of the notes issued, and in addition five per cent of the amount of the notes in gold to be used in redeeming such of these notes as are presented for redemption.

Federal Reserve Bank notes are issued by Federal Reserve Banks under the same condition as National Bank notes, except that the amount is not limited by the capital of the Federal Reserve Banks. Both National Bank notes and Federal Reserve Bank notes are obligations of the banks and of the United States.

The paper money of the United States, however, consists largely of Federal Reserve notes. There are approximately 2500 millions of these notes outstanding, while there are less than 100 millions of Federal Reserve Bank notes and not more than 760 millions of National Bank notes. Federal Reserve notes are obligations of the United States Government. The conditions under which

they are used may be discussed to best advantage after a short analysis of the Federal Reserve Banking System.

The Federal Reserve System

For the purposes of the Federal Reserve System the United States has been divided into twelve districts. In each district there is a Federal Reserve Bank, situated in a large city, and owned mainly by the so-called Member Banks. The Member Banks in each district include all the National Banks in the district and such of the State Banks as have chosen to join the system. Each Federal Reserve Bank is directed by a board of governors, partly elected by Member Banks of the respective districts, and partly appointed by the Federal Reserve Board. All Federal Reserve Banks are largely under the control of the Federal Reserve Board, which consists of eight members: the Secretary of the Treasury and the Comptroller of the Currency, *ex officiis*, and six other members appointed by the President of the United States.

The Federal Reserve Banks receive deposits from Member Banks, from the United States Government, from such Government agencies as the War Finance Corporation, and under limited conditions from other banks, but not from individuals or corporations. The Federal Reserve Banks lend their funds to some extent by purchasing United States Government securities and short-time obligations of States, municipalities, and banks; but they lend their funds principally by rediscounting for Member Banks certain commercial notes, drafts, and bills of exchange. These commercial obligations are called "short-time paper," for they must be in connection with current transactions and have not over ninety days to run, except in the case of agricultural and live-stock paper which may run for six months. Such obligations are called "self-

liquidating." This means that the maker of the obligation is engaged in a transaction where in due course of business it is expected that there will be received within the time-limit the money to pay the obligation.

Federal Reserve Notes

To return now to Federal Reserve notes, a subject of much importance in connection with most of the chapters that follow. Upon the security of short-time paper, a Federal Reserve Bank may obtain, from the United States, Federal Reserve notes. Behind each of these Federal Reserve notes there is not only the short-time obligation of some business in good credit which expects the money to pay the obligation within the specified time, but also the endorsement of a Member Bank, which carries a lien on its assets, and the obligation of the Federal Reserve Bank. In addition, the Federal Reserve Bank must have, in gold reserves, forty per cent of the amount of all Federal Reserve notes for which it is responsible, or else suffer a penalty. In addition to these reserves against notes, a Federal Reserve Bank must maintain a thirty-five per cent reserve in gold against its deposits.

Federal Reserve notes, however, together with all other forms of currency, are used for only a small proportion of the nation's business. The rest is effected by means of bank credit. We may now consider how bank credit is created and used.

Bank Credit

Bank credit is based in part but, as we shall note presently, only in part, on money entrusted to the bank by depositors. Originally a bank of deposit was a custodian of currency and the depositor paid the bank for safeguarding it until he demanded it. In the course of time,

experience showed that a bank could be so conducted as to pay all depositors on demand (not, of course, the actual coins and notes which were deposited but their equivalent) and yet make some use of a considerable portion of the money on deposit. This has been possible, however, only when banks have made such use of money on deposit as never to interfere with the obligation to pay depositors on demand.

In so far as a bank makes use of depositors' money under such conditions that it can regain the money on demand, obviously the bank is prepared to repay its depositors upon their demand. But to make full use of their money, banks must part with most of it for definite periods. Most borrowers from banks require money for ninety days, six months, or a year. Although the banks may lend depositors money for such fixed periods, the banks remain under the obligation to pay depositors on demand.

Experience has shown that if a bank retains in its vaults a part, say fifteen per cent, of the money on deposit with it; if it lends part on demand; if it lends part for ninety days and part for six months, almost invariably the bank is ready to pay those depositors who actually demand their money. If money on hand is reduced, money loaned on demand can be called in; and then, as payments are made to the bank when loans fall due, the bank can retain the money, and not lend it out again for fixed periods until the bank is assured that the requirements of depositors again justify such disposition of their money.

Notwithstanding the fact that a bank need not keep all the depositors' money in its vaults, but may lend it to others, the primary duty of a bank is to safeguard this money. Depositors are willing that banks should be more than mere custodians, but they insist that banks do not

lose their money. Therefore it is necessary that banks not only pay those depositors who demand their money, but also safeguard the money of all depositors. Sound banking practice involves, therefore, two fundamentals, both of which are essential if depositors are to trust their money to banks. One is that banks always have at hand sufficient money to pay those depositors who demand payment. The other is that banks make only such use of depositors' money as is consistent with safeguarding this money.

Depositors continue to have confidence in banks only as long as they know that banks are following such a policy. If people question the ability of the banks to pay depositors on demand and to safeguard all money on deposit, money is not deposited with banks. Thus the practice of depositing money in banks and the privilege of the banks to lend the deposited money rest, first, on the sound conduct of banks, and, second, on the depositors' confidence that the banks will continue to be so conducted. Because banks have been so conducted as to justify this confidence, depositors no longer pay to have their money safeguarded, but on the contrary often receive payment from banks for leaving money on deposit. It is the fact that banks can safely lend part of the money deposits that enables them not only to pay all expenses and to render banking service to depositors, but also to pay interest on the deposits.

Bank Deposits are only in Small Part Deposits of Currency

We have already made note of the fact that checks on bank deposits serve much the same purpose as currency, and are used in from eighty to ninety per cent of all business that involves the use of a medium of exchange. Obviously, then, banks must lend much more than the

currency that is deposited with them. As a matter of fact, more than eighty per cent of the total bank deposits of the country do not represent currency entrusted to the banks by depositors, but arise out of bank loans created through the joint acts of banks and borrowers.

When banks lend money, usually they immediately receive this money on deposit. Ordinarily, therefore, banks lend money by crediting the depositor's account with the money loaned. Sometimes this is described as lending money by making "bookkeeping entries." The fact must not be overlooked, however, that such an apparently simple bookkeeping transaction involves two of the great fundamentals of sound banking: first, in lending the money, the bank assumes a risk in connection with the loan, for the borrower may not pay the loan; second, in receiving the deposit, the bank undertakes to safeguard the deposit and to pay the depositor on demand.

The capital of a bank is one factor of safety to depositors. A bank, as well as any other business enterprise, must run risks. No matter how careful bank officers may be, some bank loans are not paid in full. The first risk of loss, however, is borne by the capital: no depositor loses money until all the capital is lost. Thus depositors are protected from loss at least to the extent of the bank's capital.

The relation of the Federal Reserve System to bank credit is highly important. In the first place, the legal bank reserves are not kept in the vaults of Member Banks, but must be deposited with the Federal Reserve Banks. Thus bank reserves are combined, and the Federal Reserve Bank need keep only thirty-five per cent of these reserves in gold as its reserve against deposits. This, however, is only the legal minimum: sound banking policy often requires more reserves than the legal minimum. In the

second place, Member Banks of the Federal Reserve System are not required to keep more than thirteen per cent reserve against demand deposits, which reserve, as pointed out above, must in turn be deposited with the Federal Reserve Bank. This thirteen per cent reserve is adequate only because Member Banks may at any time get Federal Reserve notes from the Federal Reserve Bank by rediscounting their short-time paper with the Federal Reserve Bank.

Thus we see that the business of the United States is carried on partly through the medium of various kinds of coins and paper money, but mainly through the medium of checks drawn against bank deposits.[4]

Goods and Services

As economics is concerned largely with the production and exchange of goods, we shall make frequent use of the term "goods." By goods, we mean not only tangible goods, such as cotton and engines, for which we use the term "commodities," but also intangible goods, such as light and power, and services, such as the work of teachers, bankers, and motormen.

The Forces of Supply and Demand

It has been remarked that you have only to teach a parrot to say "supply and demand," and you have made an orthodox economist. Certainly few economic terms are as commonly used, as vaguely understood, or as important. The so-called "laws of supply and demand" have proved a prolific source of fallacies.

"Supply" is used throughout this volume to denote the quantity of commodities or services offered for exchange at a given time and place, and at a given price. "Demand" indicates effective demand; that is to say,

not merely desire, but desire accompanied by money or its equivalent: and demand, like supply, always refers to a given time, and place, and price.

In traditional discussions of the subject, we find the statement of three fundamental tendencies:

1. When, at the prevailing price, demand exceeds supply, the price tends to rise, and vice versa.
2. A rise in price tends, sooner or later, to decrease demand and to increase supply, and vice versa.
3. Price tends toward the level at which demand is equal to supply.

It is to these three tendencies that we shall refer whenever we speak of the forces of supply and demand.

Tendencies they are, not laws. This is the most important general observation we can make concerning them. A complete discussion of the subject would deal with various causes which, under various conditions, offset these tendencies. It will be observed, further, that these three statements refer to all prices, not solely to the prices of commodities. This is because, with certain qualifications, the three forces apply to prices paid for the use of capital, which is what we call the rate of interest; and, in a general way, they apply as well to wages and to all other remuneration for services.

CHAPTER III

MONEY AS A MEDIUM OF EXCHANGE

WITHOUT a medium of exchange, the economic world of to-day would have been impossible. There is at least this one fact in monetary history, concerning which there is no disagreement. "The degree of specialization which characterizes modern industry," says Henry Clay, "could never have been reached under a system of barter. It is too minute, too complicated, too extensive both in time and space." [1] The substitution of money payments for labor dues, says H. R. Seager, "probably did more than anything else to break down the medieval, and usher in the modern, system of industry." [2] E. R. A. Seligman concludes that money is "the foundation upon which modern economic life rests." [3] Indeed, there is not much to add to the generally accepted views concerning the part that money, on account of its *convenience*, has played in facilitating the division of labor, the exchange of goods, the collection of taxes, and, consequently, the growth of nations — that is to say, in making possible the extremely complicated economic world of to-day.[4]

Economic Welfare requires a Medium of Exchange

Among those who admit all this, however, are many who see nothing to admire in the achievement. They feel as the outraged Dr. Johnson felt when called upon to praise the rendition, by a young pianist, of a composition said to be exceedingly difficult. "Difficult?" he exclaimed, "Difficult? Would to God it were impossible!" And some of those who to-day contemplate the periodical

breakdown of our vast, complicated economic machinery, and the resultant suffering of those who would gladly labor but can find no work, wish that the whole elaborate and difficult achievement had been impossible. They would gladly overthrow it. And seeing that money is, in fact, its foundation, they believe in going to the bottom of the matter and utterly destroying money.

Lenin, who has had the most dramatic opportunity in all history for putting this belief into practice, is said to have remarked that the surest way to overthrow the entire economic system is to destroy its currency. Results in Russia seem to show that Lenin is not far from right. But they show much more. They show that, while the demoralization of the medium of exchange prevents large-scale industrial operations and the growth of vast individual fortunes, it also prevents a high per capita production of wealth without which a high standard of living for all the people is impossible. Indeed, to many millions the destruction of all currency would inevitably mean death by starvation. Consequently, even Bolshevistic Russia has felt the necessity, in the interests of the people, of trying to establish a metallic currency which looks very much like the currency of the hated Czars. The world, no doubt, would be saved from further ill-fated attempts to build a better industrial order on the ruins of money, if the truth could be broadcast that it is not autocracy, or capitalism, or the unequal distribution of wealth that requires a medium of exchange, but the growth of nations and the general economic well-being of humanity.

The Growth of Nations depends on a Medium of Exchange

A little thought will show that national life, as we know it, and the powerful government that it presupposes, came into being — and could come into being —

only after it was possible to use a medium of exchange in the collection of taxes. "The system of barter," says R. H. Patterson, "which includes contributions to the State of man service, usually military service, and which had sufficed for the forays and rude conflicts of limited scope which prevailed during the Dark Ages, was wholly inadequate for the organized warfare and expeditions of disciplined and well-equipped troops, by which national or kingly ambition gradually brought Europe to a territorial settlement and comparatively stable equilibrium of national power." [5] In short, the organization of the administrative functions of a State never has gone far, and it is difficult to conceive how it could go far, supported only by payments in kind.

Consider, for example, merely the personal income taxes collected in the United States for the calendar year 1918 — with no thought for the moment of all other Federal revenues and all other Government uses of a circulating medium. How could the Treasury Department have collected in goods and services the value represented by $1,127,721,835 of taxes from 4,426,114 individuals in fifty-one States and territories, and from thousands of aliens and citizens residing abroad? Imagine the Federal Income Tax Office in Boston, for example, collecting, from two hundred thousand Massachusetts taxpayers, taxes of $80,000,000 in the form of goods and services — short stories, strawberries, scrap iron, silk stockings, legal opinions, caskets, cut flowers, theater tickets, hair tonic. Imagine the further difficulties and labor of preserving and transporting all these tax payments, in exactly the right amounts, and at exactly the right time, to meet the unknown and unknowable future wants of clerks in Washington, teachers in Alaska, contractors in New Orleans, soldiers in the Philippines, and hundreds of

thousands of others to whom Government payments are due. In the primitive tribe where the subject rendered tribute to his chief in the form of arrow heads, and in the rural New England town where the farmer "worked out his taxes on the road," payments were easily made in what "the State" most needed; but the extension of such tax payments beyond the simple tribe or town to a modern nation involves overwhelming complexities.

Barter Trading is too Clumsy

All this is due to the clumsiness of barter. This fact has been explained so often that no further emphasis would seem necessary, were it not for the evidence in current history of a widespread belief that we might somehow bring about better human relationships if we could first abolish money. The inconveniences of barter — the direct exchange of goods for goods — are illustrated in Lieutenant Cameron's account of his difficulties in buying a boat in Africa: "Syde's agent wished to be paid in ivory, of which I had none; but I found that Mohammed Ibn Salib had ivory and wanted cloth. Still, as I had no cloth, this did not assist me greatly until I heard that Mohammed Ibn Gharib had cloth and wanted wire. This I fortunately possessed. So I gave Ibn Gharib the requisite amount of wire; whereupon he handed over cloth to Ibn Salib, who in his turn gave Syde's agent the wished-for ivory. Then he allowed me to have the boat."[6] This case exemplifies the main inconvenience of barter, namely, that of finding a man who not only wants what you have to sell, but has for sale what you want to buy.

Among thousands of highly specialized workers included in our latest census, we find makers of windmills, coffins, lead pipe, calcium lights, and artificial limbs. Suppose each of these craftsmen were paid, as laborers

were once paid, in shares of the products of his own labor. Imagine any one of them carrying about a supply of his products and trying to use them in his daily round of marketing with the butcher, the baker, and the candlestick-maker. Without a medium of exchange, a man could make shoes and exchange them directly with a man who made wheelbarrows, though even in this case the indivisibility of the units would cause trouble; but a man who made only eyelets could not directly satisfy many of his wants on a barter basis. Indeed, in a barter society, most of the exchanges that are now easily effected by money would be hopelessly cumbersome. The waste involved in finding the double coincidence of wants and in exactly balancing accounts, and the very labor involved in transporting commodities and in making the exchanges, would prevent anything remotely approaching either the variety or the volume of present-day trade.

Textbooks on money have usually pictured the difficulties of the imaginary hatter, in the imaginary days before there was any medium of exchange, who wanted to buy a house, but who sought in vain for anybody who wanted as many hats as the house was worth. To-day the difficulty of carrying on internal trade without a medium of exchange would be even greater, because most of those who wish to buy goods have no goods whatever to offer as payment. In the shoe factory, for example, there is a bookkeeper, and a sales manager, and a cutter, and a finisher, and a night-watchman; and no one of them produces anything that he can offer to the butcher in exchange for a chop. The butcher does not want their products or their services, any more than he wants the poet's masterpiece. Much less does he desire the admirable statement which the accountant has drawn up for the furrier across the way. Neither does the accountant want

his pay in furs, nor the jeweler's office boy his wages in wedding rings. The only way to satisfy everybody is by means of an interposed something which everybody knows that everybody else will accept in exchange for whatever goods and services they have to sell.

Large-Scale Production requires a Medium of Exchange

In trying to picture the difficulty of collecting taxes on our national income without the aid of a medium of exchange, we imagined a difficulty that could not have arisen; for without a medium of exchange, we could not have brought about a division of labor or accumulated capital facilities sufficient to produce our present annual increment of taxable wealth. Indeed, scarcely any of the major economic problems of to-day could have reached their present proportions under a barter economy. Even John Stuart Mill, who said that there could not be intrinsically a more insignificant thing in the economy of society than money, except in the character of a contrivance for sparing time and labor, made note of the fact that without a circulating medium we should suffer the inability to effect any far-reaching division of labor. Incidentally, it may be noted as a fact — though this fact alone does not prove our point — that there is no instance in history of any considerable industrial development without some form of money.

The vastness of the difficulties of production under a barter economy may be seen from concrete examples. If any one will try to follow out, in imagination, all the laborious transfers of goods from place to place that would have been necessary to procure, through direct exchange, sufficient materials and services to build the Union Pacific Railroad, he will visualize the physical impossibility of carrying through large enterprises without a medium

of exchange. A poor medium is bad enough. At times the depreciated Russian money became so inconvenient that a traveler who took enough money with him for a long journey was forced to use much of it to pay excess-baggage charges. If there had been no medium of exchange, the purchasing agent for the builders of the Union Pacific Railroad would have been obliged to take with him a train load of goods wherever he went. Or imagine, as another example, the problems that would have been involved, in addition to all that were encountered, in an attempt to organize and operate, without a financial basis, the 228 companies located in 127 cities and towns in 18 States, which were combined to form the United States Steel Corporation. This enterprise, to be sure, required the use of various agencies in addition to money. The point is that large-scale business operations, based as they necessarily are on an extensive division of labor, would be impossible without a monetary system.

This world-wide interdependence of the agencies of production and exchange that is based on division of labor, says H. J. Davenport, might have developed without currency. "It is obvious," he writes, "that in a society lacking any established medium of exchange, division of labor and specialization of employment might exist very much as in the present society";[7] and, again, he says, "by trading and retrading, the possessor of any commodity for exchange would finally get possession of that particular thing he wanted."[8] But is this obvious? Is it not obvious, on the contrary, that a society, in which a man who wants to buy anything has to use his time and labor in seeking a wire-cloth-ivory-boat series of exchanges, could not possibly become the specialized industrial society of to-day? Without a medium of exchange, the division of labor and the facilities of exchange of our

day are not conceivable — not even in that theoretical world, peopled with a type of animal that never did exist, which some of the early economists often imagined for the sake of argument.

Barter has all but disappeared

Because of the convenience of making exchanges through the medium of money, barter has all but disappeared. The ingenious chapter in B. M. Anderson's "The Value of Money," in which are enumerated various types of modern barter, and various other transactions which it seems better to call by some name other than barter, serves only to emphasize the fact that the volume of barter transactions, compared with the volume of money transactions, is so small as to be a negligible factor in all the larger, practical problems of business. In the want columns of the newspapers, we do, indeed, occasionally hear of a man who wishes "to trade a well-trained parrot for a violin." But dealers in parrots and in violins have not found trading of this kind so brisk that they are obliged to take it seriously into account. "I think it can easily be shown," says Dr. Anderson, "that barter remains an important factor in modern business life, especially if one extends the term barter, a little, to cover various flexible substitutes for the use of money and checks in effecting exchanges."[9] But when anything is used as a medium of exchange, whether or not we call that medium "money," we no longer have barter. Where, for example, payments for labor are made in orders on company stores, the transactions are effected through media of exchange. "Where bills of exchange are used in internal trade extensively," says Dr. Anderson, "we have a highly important substitute for money and deposits, which functions as barter."[10] Should we not say, rather, "which functions as money"?

All these operations make use of media of exchange: barter, on the contrary, is the direct exchange of goods for goods. It is precisely because of the inconveniences of barter that traders, rather than attempt to do business without any medium of exchange at all, have devised so many permanent substitutes for primitive forms of money. It is for this reason, also, that in times of panic men resort to numerous other devices that temporarily serve as money. In our monetary theories, it is true, we must take due account of all such transfers. Failure to take them into account has led to various fallacious statements about equations of exchange and the relation of the quantity of money to prices.[11] But to call such transactions "barter" is confusing.

Summary

The gist of what we have said may be summed up in a single sentence: The use of a medium of exchange has been an indispensable means by which man has developed the specialization and coöperation which characterize modern industry, accumulated the present vast store of surplus wealth, created modern nations, and made possible a standard of living for the rank and file of laborers that was beyond the reach of even the cattle kings of primitive times. A return to barter as the chief means of trade is unthinkable.[12] Whatever improvement we are to make in the economic order must be made on a monetary basis. It behooves us, therefore, to know as much as possible not only concerning the ways in which money facilitates the work of the world, but also what ways there are, if any, in which money hinders the work of the world.

CHAPTER IV

MONEY AS A STANDARD OF VALUE

BEFORE the World War a carpenter in Vienna loaned three thousand Austrian gold crowns, the savings of a lifetime, the equivalent of a full year's wages. After the War the debtor returned to the carpenter, in full legal settlement, three thousand depreciated paper crowns, the wages of three days' labor. Thus does a shifting currency make a mockery of thrift. Still further to illustrate the instability of money, Joseph Szebenyei tells of a traveler in Vienna, who offered the waiter in a second-class restaurant a twenty-dollar gold piece in payment for a dinner bill of three hundred kronen. The bewildered waiter, after examining the treasure with curiosity and delight, went to the proprietor and said, "Here is a gentleman, sir, who wants to pay with a twenty-dollar gold piece. How much am I to give for it?" Having received instructions from the landlord concerning current rates of exchange, the waiter returned to the guest and said seriously, "I am to give you as much change, sir, as you desire,"[1] the full amount, presumably, being more than the traveler could readily carry away with him. These incidents show how far short money can come of being a standard of value, or a standard of deferred payments. No matter how much value a monetary unit may measure at any one time, it may soon be no measure of value at all.[2]

On the other hand, we have not heard of a dry-goods merchant, even in Austria, saying to a customer, "I am to give you, sir, as many yards as you desire." The yard-

stick is a standard — that is to say, a virtually invariable unit. So zealously is the yardstick guarded against fluctuation in length that the visitor in Washington who wishes to observe the standard yard, in the glass case in which it is kept at uniform temperature, must view it through a telescope, lest the heat of his body might change the length of the bar one ten thousandth part of an inch. How ridiculous it would seem to substitute for this standard yard the waist measurement of the President of the United States! How the unit would have varied during recent administrations! Yet at one time the "yard" actually did vary with the girths of the chieftains; and the monetary "standards" of the world still do vary beyond the physiological ranges even of the fat lady and the living skeleton at the circus. That is why, since 1914, the use of index numbers of prices to measure the shifting values of monetary units has spread rapidly, though nobody has needed an index number to keep track of the length of the yardstick. It is a true standard: money is not.

It is said that the chief difference between a money economy and a barter economy is due to the introduction of something whose value varies but little. "Money," says Professor Alfred Marshall, "tends to steady the market."[3] With the statement that money introduces into the processes of exchange a commodity whose value might be made virtually constant, many would agree: others would not agree. The fact is, however, that monetary units have never measured purchasing power with a constancy approaching that of our units for measuring space, or temperature, or force. Since the World War began, money "standards" have been chaotic rather than constant. Whatever money might have done, if otherwise administered, it has, in fact, during the past few

years unsteadied the markets of the world. The folly of thinking of money as a standard should be widely proclaimed until we succeed — if we ever do succeed — in making it a standard.

The "Gold Standard" is not a Standard of Purchasing Power

When money is on a gold basis, it is a standard of purchasing power for one commodity, and only one. As long as the gold basis is adequate, the power of money to purchase gold does not change. This is an advantage to dentists and goldsmiths: they know precisely what weight and fineness of gold their dollars will buy, year in and year out. Other people are protected to the same extent; they know that their dollars will continue to be standards for the purchasing of gold. But not for anything else. Unfortunately, it is almost always something else that they want to purchase.

Paper money may be on a genuine gold basis — that is to say, actually and freely convertible into gold at a fixed parity up to the limits of the demand for conversion — and yet be unstable in purchasing power. So far does the gold basis fail to insure stability that the United States gold-supported dollar of 1920, as most men found to their sorrow, was worth scarcely more than one third of the dollar of 1913. Even in time of peace, the fact that paper money is convertible into gold does not make it a standard of purchasing power. In point of fact, as Jevons long ago demonstrated by means of index numbers of prices, the value of gold money has varied greatly from time to time. During the twenty years preceding 1809, gold prices doubled, which is the same as saying that the value of gold was reduced fifty per cent. During the next forty years the situation was reversed: the value of gold doubled and prices were cut in two. Then followed a

period of rising prices up to 1873, during which the purchasing power of gold was reduced about one third. From 1873 to 1896 money appreciated in gold-standard countries about one quarter. William W. Carlile appears to be in error when he says that "an appreciation of gold as compared with commodities generally is in truth something that only happens during a panic." [4] It happened in all gold currency countries throughout the period from 1873 to 1896. From 1896 to 1914, on the other hand, money depreciated about one third. Some of these changes in the purchasing power of the dollar are shown graphically in Figure 3.[5] The index of commodity prices

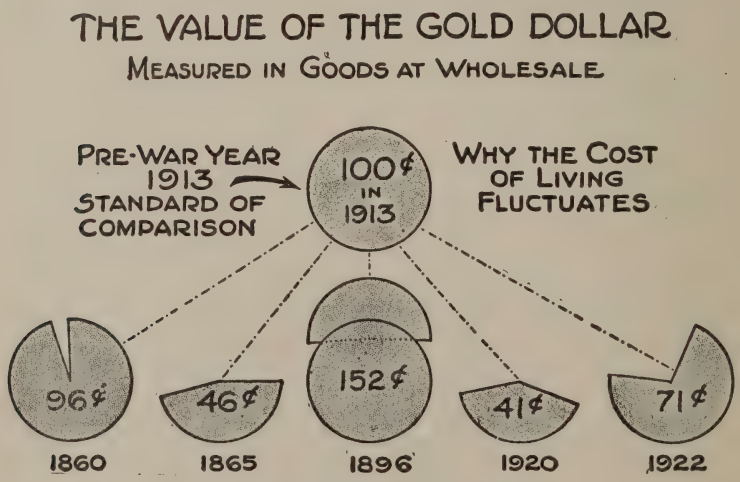

FIGURE 3

in England, compiled by Augustus Sauerbeck, based on the average of 1867–1877 as 100, shows a rise from 74 in 1849 to 111 in 1873, and a drop from 111 in 1873 to 61 in 1896. In view of all these facts, we cannot escape the conclusion that gold-supported money, both in time of peace

and in time of war, has proved unreliable as a standard of purchasing power.

That the price-level does not vary directly with the stock of monetary gold is shown in Figure 4.[5] During the greater part of the years 1917, 1918, and 1919, gold reserves in the United States remained nearly constant. The chart, however (using 1914 as the base year), shows

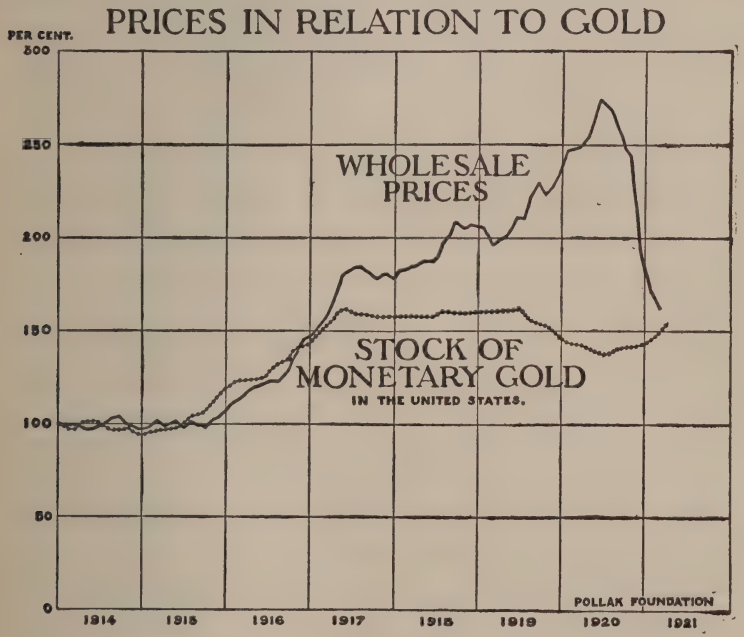

FIGURE 4

that wholesale prices during this same period shot up from about 150 to about 250. During the next two years, vast gold reserves did not prevent prices from going down. From 1910 to 1915, there was a large production of gold but unusually slight fluctuations in the price-level. Evidently the stock of gold may go up while

prices go down, or vice versa; or prices may stay about where they are, while stocks of gold increase. It is only over long periods of time that fluctuations in gold production have much to do with the price-level.

Gold Itself is Unstable in Exchange Value

A gold basis evidently does not stabilize the purchasing power of the superstructure of paper certificates and bank credit. But would it not be possible to have a stable dollar if all money were either actual gold coins or paper certificates backed by 100 per cent of gold reserves? Far from it; for gold itself would still be unstable in purchasing power. The value of gold, like that of any other commodity, is affected by changes in supply and demand, the contentions of the reformers to the contrary not having interfered in any way with the operations of these fundamental forces. Both the supply of gold and the demand for gold not only may change from year to year, but are certain to change. The supply of gold may be increased suddenly by the discovery of new mines or new processes: it may be increased a thousandfold by the invention of methods of making gold out of baser metals or extracting it from the sea — achievements that are no more chimerical than the radiophone. The demand for gold, on the other hand, even if gold were the only medium of exchange, might be altered at any time by changes in population, in fashions, in the amount hoarded, in the use of substitutes for gold in the arts, and, above all, by changes in the volume of transactions that required the use of gold. In short, even if gold were the only medium of exchange, neither the demand for gold nor the supply of gold would naturally fluctuate in any known or predictable relation to fluctuations in the work that money is called upon to perform. Therefore, gold itself would fluctuate in purchasing power.

As a matter of fact, various commodities at various times have proved more nearly constant in exchange value than gold. In the United States, during one period, a depositor who wished to protect his savings against any variation whatever in exchange value could have achieved this purpose most nearly, it appears, by taking his dollars out of the savings bank and investing them in carpets. Carpets came nearer than dollars to being a standard for measuring purchasing power, in the sense in which the yardstick is a standard for measuring carpets. In other words, the exchange value of carpets, in terms of commodities generally, varied but little. In England, during another period, nitrate of soda was the only commodity of all those in the Sauerbeck list that remained virtually constant in purchasing power.[6]

Nevertheless, in gold-standard countries gold is still regarded by many people as fixed in value. Even Mr. Edison falls into this error. He says that the miner has a great advantage over the farmer, because the miner can present his gold at the mint at any time and get full value for it, whereas the farmer never can tell how much he will be able to get for his products. This difference is imaginary. Both the farmer and the miner get "full value" for whatever they sell: that is to say, they get whatever the market value happens to be at the time of sale. Both gain at certain times, and lose at other times, because of the fluctuating exchange values of their products.

The mistaken idea about the fixed value of gold leads many people to believe that the value of gold determines the purchasing power of the paper money that is based on gold. It would be nearer the truth to say that the purchasing power of the gold, in gold-standard countries, is determined by the value of the paper money and all the other money of which the gold is a small part. If it were

not for the use of paper money and bank credit based on gold reserves, the United States gold dollar would now be much higher in purchasing power; for, if gold dollars had to perform all the work of exchange, they would be in even greater demand. In short, although the value of gold has always varied widely, its value in gold-standard countries has not fluctuated as widely during the past few decades as it would have fluctuated had gold been the only medium of exchange. Some critics of the Federal Reserve System and of the bank credit and paper money that it supports overlook the fact that our dollar comes nearer to stability than would have been possible had every dollar been made of a fixed quantity of gold. The fact is that every change in the price-level is a change in the purchasing power of gold: as prices go up, the value of gold goes down. And this would be the case, if gold were the only medium of exchange.

Inconvertible Paper Money is Still Worse

To abandon the gold basis, however, in favor of a paper basis of the Lenin-Trotsky type is to plunge into chaos. Paper money, when it is not freely convertible into something which is regarded as valuable and generally accepted in exchange for goods, has usually been even less reliable, as a standard of purchasing power, than gold or silver. The history of every country furnishes evidence. During the war of the American colonies for independence, the irredeemable Continental issues fell off in purchasing power until the phrase "not worth a continental" became a byword. Early in the nineteenth century Spain issued paper pesetas until they had depreciated ninety-six per cent, although the Government still declared them to be legal tender. During the same period Austria printed so many florins that eight of them would not buy

a single silver florin. In Argentina, in 1840, fiat money was issued in such quantities that it took thirty-two times as many paper pesos as formerly to buy an ounce of silver. In Uruguay, in 1875, paper money increased in volume until the premium on gold ran as high as 875 per cent — that is to say, until it took 875 paper dollars to equal in purchasing power 100 gold dollars. Following the Satsuma insurrection, Japan issued inconvertible Government notes until the premium on silver was seventy-nine per cent. These lessons are taken at random from the pages of monetary history.

In spite of these lessons, many European countries, during the World War and after, plunged into debauches of irredeemable paper money. In some of the countries the plunge was not taken in ignorance of the consequences, but with the idea of averting what seemed to somebody to be greater disaster — the overthrow of the party in power, perhaps, or deeper business depression, or even revolution. In England, money fell to about one third of its pre-war purchasing power. In France it fell further; in Italy, still further; while in Germany the mark fell far below one seven thousandth of its pre-war exchange value. In Austria, where paper money poured forth from the printing-presses until it cost more to print a krone than a krone would buy, the thrifty proprietor of "Kronen Bier" used paper money for labels in order to reduce his printing bill. It remained for Russia to say the last word concerning irredeemable paper money as a standard of value. Lenin and Trotsky pursued the policy of fiat money to its logical conclusion. As a result, a Russian ruble, which was worth about forty-seven cents on the pre-war gold basis, became not worth a peasant's notice on no basis at all. It took more than his pockets would hold to buy a copper cent's worth of bread.

Certain as it is that money is not a standard merely because it is based on the fiat of a government, it is equally certain that money is not a standard merely because it is based on land, or on stores of wheat, or on any other farm products. Commodity money, however, is a subject of such perennial interest and such real importance that we shall deal with it in a separate chapter.

Equally futile is the attempt to stabilize the purchasing power of monetary units by having them "represent" energy units, or labor-hours, or production capacity, or merely anticipated output of wheat or fertilizers. It would be just as effective to have money "represent" the sands of the sea. It would be far more effective to have it represent the annual consumption of postage stamps at fixed postal rates. "Representation," unless it means actual and free convertibility into a commodity having the chief characteristics of gold, is not necessarily any restraint at all upon issues of money.

Conclusion

We must conclude that everyday thinking concerning economics would be relieved of one of its many confusions if our unstable monetary units were not again referred to as standards of value. In connection with personal affairs — investments, insurance, family budgets and daily purchases — even those who regard these remarks as commonplace, do not consistently take them into account. In business enterprises as well, men who are perfectly aware that price-levels are changing, nevertheless frequently fall into economic error because they disregard the full effects of these changing price-levels. Looking upon their book profits as if dollars were standards of value, they joyously expand their operations, and commit themselves to future payments in money, merely to

find, after the crisis, that their profits are only in depreciated goods while their debts are legally payable only in appreciated dollars. Relying on money as a standard measure of foreign trade, a leading financial journal assured us, early in 1921, that "exports from the United States to Germany in the fiscal year which ends with June, 1921 . . . will be of greater value, measured in good American dollars, than in any year in the history of our trade relations." "Good American dollars" are good for how much? When we answer that question correctly, we find that exports to Germany in the year in question were really less than they had been for twenty years. In that case, as in many others, the false conception of money as a standard of value obscured its actual effects on the economic order.

Even to-day, after the experience of the past six years, there are leaders in the world of commerce and finance who insist that the American gold dollar is a satisfactory standard, stable in purchasing power. In the editorial columns of a leading financial publication we read: "To-day this dollar, in the confusion of finances, the disorder of so-called 'exchanges,' the debasement of foreign currencies, stands alone, unchanged and unchanging. . . . Because it exemplifies the gold standard, in itself it is stable. . . . Why or how has its 'purchasing power' diminished? This is a supreme fallacy — it has not. . . . It stands out above the carping critics who would make it a shifting thing. . . . Around it whirled a fateful war, and it stood fast. . . . But only because back of the American dollar is the gold dollar, and back of the gold dollar is the gold standard — and that, though 'tried,' is not found wanting." [7] In another editorial we read that "the gold standard as a standard does not change at all," and the American dollar is the "sole and chief representative of

stability in the monetary world of to-day."[8] Thus is expressed that unreasoned faith in the stability of the gold standard which has become a cardinal point in the creed of many men, and which prompts them hastily to reject all proposals for improving the currency — the worthy along with the unworthy.

We agree with these men that the gold basis of money should be retained. We agree, however, not because gold is a standard of purchasing power, for it is not a standard, but for reasons which we shall set forth in another chapter. We must admit that gold price-levels do change. If, while we are being carried away by a flood, we still insist that the level of the river does not and cannot change, we may interfere with the adoption of flood-prevention measures. Repeated denials that we have confusion of monetary values under the gold "standard" may not be enough to save us from a flood of fiat money. If it appears to most people that our leaders in politics and in finance are not disposed to face the facts and devise safe and practicable remedial measures, it is all the easier for such wizards as Henry Ford and Thomas Edison, and many less distinguished reformers, to arouse popular enthusiasm for measures that would merely lead us from monetary confusion to monetary chaos.

CHAPTER V

MONEY AND INFLATION

MANY current controversies about inflation are due not to conflicting ideas but to conflicting uses of the same word. When a nation has too much money, it is said to have inflation: that is about as near as we can come to an accepted definition of the term. As to what constitutes having too much money, there is no agreement. No nation has ever had enough money to satisfy everybody. When dollar-profits and dollar-wages are increasing, even though the increase in the number of dollars is wholly offset by the decrease in the value of the dollar, most people feel a glow of prosperity. At such times they object to calling the currency unpleasant names: they prefer to speak of its elasticity and of the creative power of expansible bank credit.

One economist ventures to define inflation as "an abnormal increase of money"; but this definition only transfers our difficulty to the word "abnormal" — a word that brings with it more or less confusion whenever it enters the realm of economics. What is an "abnormal" increase of money? Has the monetary world ever been in a "normal" condition? To these questions, there is no accepted answer. Until we can locate the normal point, we cannot tell what is abnormal. Other writers confine the term "inflation" to that part of the total volume of money which is responsible for a rise in prices. Bertil Ohlin, for instance, says inflation is that rise in prices the causes of which are found on the side of money, and, other things being equal, finds its expression in an increase in the cir-

culation.[1] One trouble with this definition is that other things never are equal: they vary with monetary changes, and they vary independently of monetary changes, and it is impossible to measure all their variations. Consequently we never can tell precisely what part of a rise in prices is due to an increase of money.

Frequently inflation is defined as a quantity of currency or bank credit, or both, in excess of "the legitimate requirements of business." So far, so good: but what are the legitimate requirements of business? The answers to this question are many and varied: they agree, for the most part, only in being hazy. Such phrases as "the requirements of commerce," "trade needs," "the financial demands of industry," and "enough money to do business with," while appearing to be quantitatively exact, are in reality far from it. As they are used in everyday discussions, these phrases merely add confusion to subjects that are already confusing. Prices and volume of money are definite factors, subject to approximately exact measurement; but what is the measure of "legitimate trade needs"?

A Definition of Inflation

Is it possible to define inflation with reference to trade needs and with quantitative precision? Let us see. If we are right in the contention that the chief monetary need of business is enough money so distributed as to sustain production, year in and year out, our interest in the volume of money centers around its effect on the price-level. After all, most people care nothing about fluctuations in the general supply of money until something startling happens to prices. Any increase in currency which actually financed an increased volume of trade, without a change of the general price-level, would not be generally

condemned. In other words, there would be no widespread objection to increased purchasing power commensurate with increased trade. If the world had experienced extraordinary expansions of currency only in connection with equally extraordinary trade revivals, accompanied by no extraordinary rise in prices, it is safe to say that there would have been no controversies over inflation. It seems best, therefore, to define inflation with reference to changing price-levels.

If we use the term "inflation" to denote any increase in the volume of money that is accompanied by a rise in the general price-level, we confine ourselves to a definite and logical use of the term, and one that directs attention at once to the practical monetary problem with which business is to-day chiefly concerned. Similarly, we may well define "deflation" as any reduction in the volume of money that is accompanied by a fall in the general price-level. That is the only sense in which the words inflation and deflation will be used throughout this volume. As we shall see in the tenth chapter, it is possible to have an increase in the price-level without an increase of money, or an increase of money without an increase in the price-level; but there must be increases in both, according to our definition, before there is inflation. Controversies are thus avoided over the question what is normal, and the question whether, during a given time, we have inflation, or deflation, or neither. We do not now speak of normal and abnormal degrees of fever. Any rise at all in the temperature of the human body above ninety-eight and three-fifths degrees denotes fever. On this point, we do not argue or even ask the opinions of doctors: we read the thermometer. If we adopted an equally definite use of the term "inflation," we should not need the diagnosis of economic doctors: we should read the treasury and bank

reports and the index numbers of prices. If we found that the volume of money and the price-level were rising, we should know that the currency had been inflated.[2]

It is true that a rise in the price-level can take place without any increase of money in circulation: a decrease in the volume of goods may have the same effect upon prices as an increase in the volume of money. Just as we can increase the size of a balloon either by pumping in more air, or by decreasing the outside pressure, so, as a rule, we can increase prices either by pumping more dollars into the monetary circulation, or by decreasing the pressure of the work that money has to perform. It seems best, however, not to extend the term "inflation" to cover failures to reduce the money in circulation when prices begin to rise. Such an extension of the use of the term would be at variance with its derivation, and would, moreover, leave the term less definitely applicable to the actual, current monetary problems of the world.[3]

The Vicious Spiral of Inflation

Inflation leads naturally to further inflation. Once the upward movement of prices has started, there are at present no forces in the ordinary operations of business and finance sufficient to correct the fault in due time. If the volume of money is freely "responsive to the needs of business," it is responsive to the needs of inflation. When prices are rising, no matter what the causes may be, prices tend to rise still higher. Higher prices lead to higher wages; higher wages lead to still higher prices: higher dollar-valuations of products are used as bases for larger bank loans; larger bank loans put more money into circulation and thus provide buyers with the means of further bidding up prices: speculation still further stimulates the upward movement; and the upward movement

still further stimulates speculation: and so on until a crisis is reached. In much the same way, the atoms of gas that flock around the end of a gas lighter increase in velocity, thus producing heat, thus further increasing their velocity, thus producing more heat, and so on, until the gas bursts into flame.[4]

In Germany, for example, following the World War, the danger of continued inflation decreased the value of the mark in foreign trade; this increased the real burden of Government expenses at home and reparation payments; this, in turn, led the Government to call upon the Reichsbank for new loans which caused still further depreciation of the mark. All this stimulated further speculation in goods, which withheld goods from the markets and decreased the amount of money available for other uses, and thus led to new demands for new issues of currency, which led to still higher prices, which incited the people to demand larger doles, which increased the Government budgets, and forced upon those in power the recurrent alternative of printing more marks or being thrown out of office. Thus, wherever the volume of money is not regulated in the interests of a stable price-level, the vicious spiral of inflation carries a nation on to a crisis or to a period of depression.[5]

Inflation through Bond Issues

National financing by means of taxes is less costly than financing by means of loans because loans are far more prolific sources of inflation. This objection to loans would not hold if all payments for bonds were made from current income. In that case (if the velocity of money from use in consumption to another use in consumption remained unchanged) the amount thus raised and expended by the Government would be exactly offset by

the amount saved by subscribers and invested in bonds. No new dollars would be placed in circulation: therefore no new dollar-demands would appear for the existing volume of goods. But, as a matter of fact, a large part of the money paid for bonds is borrowed from banks. Indeed, the slogan of the first Liberty Loan Campaign was "Borrow and Buy Bonds." This borrowing involves expansion of bank credit without increased production of goods; and that means inflation. As prices go up, some of the borrowers have to use their bonds as security for further loans. So new dollars continue to press their claims in markets where there are no new goods.

In so far as war is financed by taxes, it is less likely to bring about inflation through expansion of bank credit. This is true, in the first place, because banks regard money paid for taxes as money spent, and are not inclined to lend money for this purpose, whereas they look upon money paid for bonds as money invested. Banks feel safe in advancing money for the purchase of Government bonds, which have a rather stable market value and yield a steady income; but banks are more wary about lending money to enable a borrower to obtain a tax receipt, which, like a receipted bill for last month's groceries, has no market value and bears no coupons. In the second place, bonds lead to inflation more readily than taxes because the taxpayer also prefers bonds to tax receipts. He hesitates to borrow money to pay his taxes as he hesitates to borrow money to pay his coal bill, for in either case all he has left is a debt. But why have any reluctance in accepting a loan for the purpose of buying a bond? There is the bond to show for the debt; and there, in addition, is the semi-annual interest. Prudent man that he is, he would reduce his consumption — perhaps even give up his automobile — rather than go into debt to pay his

taxes. But why should he save any more than usual in order to buy a bond, when he can borrow money now and repay the loan at any time he pleases with the proceeds of the sale of the bond itself? It is precisely this universal difference between the attitude toward bonds and the attitude toward taxes that makes it seem to governments much easier to pay for wars with loans than with taxes. For the same reason, inflation is liable to increase in proportion as a nation resorts to loans rather than to taxes. In this connection, Sir Drummond Fraser points out that in Great Britain heavier taxation during the War would have prevented the greater part of the rise in the cost of living, the violent fluctuations in the rates of foreign exchange, and the consequent hindrance to trade.

Taxation costs a Nation less than Bond Issues

Payment of war bills by means of taxation costs a nation less in the end than payment by means of bond issues, for it forces a general limitation on consumption. Apparent postponing of payment, on the other hand, through the sale of bonds, encourages extravagance. It is often said that when we go to war, we pile up huge debts for our children to pay, in the form of interest and principal on government bonds. But there is no way whatever for the world to pass on its war debts; they are paid day by day, hour by hour. The sunken ships, the wasted food, the exploded shells, the hours of labor, the mangled bodies, will not be supplied by future workers. Everything that is consumed has already been produced. Any one nation, to be sure, can postpone paying its war bills, in so far as it makes external loans; but when a country borrows only from its own people, it pays for the whole war out of past and current savings. The Liberty Bonds issued by the United States were not devices for

making future generations pay for the War. These bonds transfer obligations, not from one generation to the next, but from some people to other people. When the two billions of the First Liberty Loan are paid, two billions will be taken from some people and paid to others. Some of these people will pay in taxes just about what they receive for their bonds; others will pay less, others more. The whole country will be not a dollar richer or poorer than before the two billions changed hands; and not a dollar of that money will be used to pay for the War.

Some people who get as far as this in their thinking conclude that a country loses nothing by making internal loans. What difference does it make, they ask, if in the end we merely pass the money around among ourselves? Indeed, may not those of us who pay little or no direct taxes be better off than before, since, in any event, *we* shall not be called upon to pay the debt? Such people overlook the fact that there is a negative sense in which wars must be paid for by all the people who survive. In this respect a war is like an earthquake or a flood: after the disaster there is less material wealth to hand on to succeeding generations. Whatever is destroyed is gone: that is the immediate and certain result. That, rather than the fact that the bonds must be paid, is the main economic concern of the next generation. Since individuals rightly look upon bonds as investments rather than as taxes, it is easier for governments to raise money by selling bonds and therefore easier to be extravagant. Consequently, if succeeding generations could plead their own cause, they would urge that all current consumption be paid for by means of taxes that do not involve inflation of the currency.

Here, again, we meet the conflict between individual and group interests. From the standpoint of the group,

government bonds are nothing but claims against future taxes. The only way the people can collect interest or principal on the bonds is to pay it themselves. That is all the bonds promise: they are solemn obligations of the people to pay themselves certain amounts of money in the future out of future savings. A bundle of receipted butcher's bills is as much national wealth as a vault full of government bonds. But to the individual owner, a bond means real purchasing power. In any case, he will be obliged to pay his taxes in the future, whatever they are. The more bonds he has, the more money he will have for the purpose. What he fails to see clearly is that if all war bills were paid by taxes collected during the war, and if subsequent taxes were levied on just as equitable a basis, the war would cost him and all the other taxpayers less than when bonds are sold by means of inflating the currency.

Inflation is Indirect Taxation

Whether the Government inflates the currency in this way or by printing money, the result, though never called by the forbidding name of taxation, has all the effects of taxation. A simple illustration will make this clear. Let us suppose that there are a million dollars of purchasing power in the hands of the people. Let us suppose that each dollar will buy one unit of commodities. If, then, the Government obtains a million new dollars, through increasing the volume of bank deposits or the volume of paper currency, and with this new money appears in the markets as a competitor for the existing commodities, the result is likely to be that the people can buy with their dollars only half as much as before, or even less. The Government takes the rest Thus, the people have been taxed as effectively as though the volume of money

in circulation and the price-level had remained the same, and the Government had taken from the people in direct taxes fifty per cent of their money. Actual cases are always far more complicated and more extensive than our simple illustration, but the effect of inflation is always the same: multiplying units of goods and units of money by millions obscures but does not alter the principle. Whenever the Government resorts to inflation as a means of paying its bills, it resorts to clandestine taxation.

Disastrous Effects of Unstable Money

Shifting price-levels are disastrous — morally, socially, economically. Where the price-level happens to be is of minor importance: the major need is that it should stay where it is. Business can proceed on one level just as well as on another, once the level has become stabilized, just as a ship can sail as serenely on the waters of Lake Superior as on the lower level of Lake Huron, once the ship has passed through the locks. It is the process of changing levels and the frequency of the change that retard progress. If there is sustained production of goods approaching maximum capacity, and sustained buying by consumers commensurate with that capacity, the price-level is satisfactory, wherever it happens to stand.

None the less true is this if we admit that, *under existing economic conditions*, a uniform price-level is neither possible nor desirable. In later chapters of this book, and in Pollak Publication Number 3, on *Costs and Profits*, we shall endeavor to show that, as production is now financed and as profits are now distributed, the desired relationship between the making of goods and the using up of goods cannot long be sustained. Wherever business is subject to sharp cyclical fluctuations, shifts in the price-level become necessary at the top in order to dispose of exces-

sive stocks, and at the bottom in order to bring about increased production more rapidly than would otherwise be possible. Maladjustments between money spent in production and money spent in consumption are sure to develop in such a way that nothing but a change in price-level can bring about a quick resumption of business activity.

Inflation is Morally Disastrous

There is a correlation, difficult to measure statistically, but easy to observe, between depreciated currencies and depreciated morals. Unstable monetary units are morally injurious because they are unjust. As a matter of justice, the dollars returned in payment for a loan should be the same as the dollars borrowed — the same in the only quality that matters, their purchasing power. Dollars are not standards of deferred payments unless their command over the general range of commodities remains virtually the same, year in and year out. When their purchasing power changes, either the debtor or the creditor loses more than justice demands. Men sow where they do not reap, and reap where they do not sow. Our Austrian carpenter loaned his full year's wages and received in full payment the wages of three days. In gold-standard countries, the injustice differs in degree but not in kind.

Furthermore, inflation of the currency thrusts the financial burdens of a nation most disastrously upon people who are least able to bear them; on those with fixed incomes — clerks, teachers, some groups of wage-earners, and all people with small salaries; and on widows and orphans dependent on pensions, or insurance annuities, or savings bank accounts. Meantime, some holders of goods and some speculators in the exchanges make vast fortunes out of the sufferings of others. In a remark-

ably sound and penetrating series of papers, published in 1791, Pelatiah Webster describes the results of the contemporary inflation. "If it saved the state," he says, "it also polluted the equity of our laws; turned them into engines of oppression and wrong; corrupted the justice of our public administration; destroyed the fortunes of thousands who had most confidence in it; enervated the trade, husbandry, and manufactures of the country; and went far to destroy the morality of our people."[6] In short, governments, by means of excessive issues of paper money or forced loans from the banks, destroy the standards which they themselves have set up. Thus, by means of that "least covert of all forms of knavery, which consists in calling a shilling a pound," [7] they deliberately repudiate large parts of their own debts. Sir Lancelot Hare is right when he insists that, whatever standard is adopted — whether it be gold or anything else — it is on the good faith of man as expressed through a nation's government that the standard of measurement of value can alone depend.[8]

Inflation as an official source of revenue is in effect, as we have shown above, surreptitious and inequitable taxation: it is national, official repudiation of fundamental principles of justice. The Liberty Bond issues in the United States, because they were floated partly by means of inflation, resulted in heavy indirect taxes, distributed, not in accordance with the ability of the people to pay taxes, but in proportion to their daily expenditures. Direct taxes are far better, for the victims know precisely why they have lost some of their purchasing power and who has taken it; but when a part of their purchasing power has been taken from them by means of inflation of the currency, they do not know what has happened and they put the blame anywhere but in the right place. Witness

the indiscriminate condemnation of "profiteers." Indeed, confusion of issues is often the official aim. Governments sometimes resort to inflation as robbers resort to chloroform in order that they may meet with less resistance.

Because shifting price-levels thus provide opportunities to get something for nothing, inflation does the moral damage of encouraging extravagance and wild speculation, while it discourages thrift and labor. In describing the degenerating influences of one period of inflation, Andrew D. White says: "In city centers came a quick growth of stock jobbers and speculators; and these set a debasing fashion in business which spread to the remotest parts of the country. Then, too, as values became more and more uncertain, there was no longer any more motive for care or economy, but every motive for immediate expenditure and present enjoyment. So came upon the nation the obliteration of the idea of thrift. Luxury, senseless and extravagant, set in; and this, too, spread as a fashion. To feed it, there came cheating in the nation at large, and corruption among officials and persons holding trusts; and while the men set such fashions in business, private and official, women set fashions of extravagance in dress and living that added to the incentives to corruption. Faith in moral considerations, or even in good impulses, yielded to general distrust. National honor was thought a fiction, cherished only by enthusiasts. Patriotism was eaten out by cynicism."[9] It is impossible to tell, merely from reading this account, whether it was written to describe the condition of France during the "Mississippi Bubble" orgy of speculation in the early eighteenth century, or the similar troubles of Austria in the early nineteenth century, or the era of Continental currency in the United States, or conditions in Germany in 1922, or — what the passage was, in fact, written to describe —

the experience of France during the Revolution with paper *assignats*.

Similar results have always followed inflation. The account given by the American Consul, T. R. Jernigan, of conditions in Japan describes the moral consequences of extreme inflation at all times and in all countries, for certain human characteristics appear to have changed but little through the centuries. "In the year 1881," he says, "nearly everything in Japan had greatly risen in price, and as the great majority of the people considered only price, and not value, and ignored the wholly fictitious nature of the advance, it is not surprising that they imagined it both solid and likely to endure, and thought themselves very prosperous and quite justified in launching into much extravagant expenditure. Accordingly new farmhouses sprang up in every province, new clothes and ornaments were freely purchased, land property became in great demand, and capital was inconsiderately borrowed at high rates of interest (and as inconsiderately lent by the national banks) and in general everybody rejoiced in hope and a sense of prosperity."[10] Of the disastrous results in Japan, we shall have something to say presently when we discuss the evils of deflation.

Travelers on the Continent after the World War found business men, professional men, and even laboring men "exchange mad": gambling seemed to be their main occupation. The following report is typical: "The constant depreciation of currency seems to have a deteriorating influence upon morality. Newspapers are full of political scandals, public corruption, and the misdoings of bank swindlers, defalcators, and petty thieves. The respect for property is diminishing in proportion to its higher money value; and the amounts in which dishonesty deals are counted in millions. . . . To cheat the state, to trans-

act crooked business is not looked upon as unfair: nor is it at all unusual — in Central Europe, at least. Mail robberies, tampering with valuable packages, are matters of everyday occurrence, and, indeed, are part of the routine. . . . Every wage-earner or salaried worker has to speculate, barter, or steal in order to make both ends meet." [11] Under such conditions, feverish business activity, larger dividends and reserves, and full employment of workers are not evidences of prosperity that can last. "All business to-day," said a German Government officer in 1922, "is merely a gamble in currency and exchanges."[12] Such a moral breakdown is only in small part, if at all, the necessary aftermath of war: it is, however, the inevitable result of vast inflation. It is sure to come, to some extent, with any attempt to finance a nation by depreciating its currency.

The alternative method of financing a nation is the rigorous moral exercise of abstinence, economy, and hard work. There have been many futile attempts to make people moral by government regulation, but no government has had the courage to make full use of one of the most effective methods at its disposal. Few things within the power of the state can do so much for public morality as the protection of the currency from excessive fluctuations in value.

Inflation induces Social Unrest

Inflation leads to social unrest; for, whenever certain groups, through no virtue of their own, are prospering, while other groups, through no fault of their own, are suffering, there is cause for protest against the established economic order. The protests may be in wrong directions, for few people understand where their troubles begin. Meantime, their troubles are real and their resentment is righteous.

When there is inflation, profits rise faster than wages, and rising profits inevitably incite a rising spirit of revolt. Workers everywhere are more likely to be content with low wages when business is bad than with high wages when business is good. No matter how much labor leaders and social workers may insist upon maintaining a given standard of living, the workers themselves are more likely to ignore standards of living and insist on a fair share of the profits. Their position is economically sound. For to take "the American standard of living," or any other standard, as a basis for fixing wages is economic nonsense. It is as though a corporation should fix the dividend rate with reference only to the needs of stockholders, regardless of the profits of the business. In deciding how many suits to make out of a bolt of cloth, a tailor does not first consider how many suits he would like to make: he first measures the cloth. Wage-earners, as a rule, do not think first of the standard of living they would like to maintain: they first try to measure the possibilities. The best measure seems to them to be the profits. No wages whatever, no matter how far above the amount carefully figured by labor leaders or by economists as required "to keep a typical family of five in health and comfort," will be satisfactory as long as workers believe that the condition of the business warrants higher wages.

As the profits of war industries increased in England, laborers demanded "a fair share of the increase." They had no means of knowing what a fair share would be, nor did they much care. It seemed to them that employers were making all they could make; there seemed nothing to do but follow the example. And as money-profits were really piling up, employers put up wages rather than run any risk of strikes. As long as prices continued to rise, the increased pay-roll was promptly provided by the in-

creased prices of the products. The consumers of these products paid the bill. Wherever the employers had war contracts, on a cost plus commission basis, they had no objection to higher wages: the higher the wages, the higher the profits. In such cases, the consumers were all the people, and all the people paid in taxes, direct and indirect, both the wages and the profits. Thus inflation leads to "the high cost of living" and to widespread discontent. Says the French proverb, "After the printing-press, the guillotine."

As wages rose in the United States during the World War, wage-earners went into the markets with the expectation of buying more goods than they had been accustomed to buy with their old wages; for they were still more or less attached to the idea of money as a standard of value. They thought that, with more dollars than they had ever dreamed of getting, they ought somehow to be better off than ever before; yet they found that they were not as well off. They said, again and again, that they should be glad to return to their pre-war wages and pre-war prices. Some of them, in certain manufacturing centers where the effect of higher wages on retail prices was immediately evident, asked their employers not to raise their wages again, since prices in the local stores went up faster than wages. The workers believed that somehow they were being fooled. They condemned employers, shareholders, "profiteers," "Wall Street," the Federal Reserve System; in short, they condemned everybody who seemed to be profiting by the War while they themselves seemed to be losing.

As wages were put up in "essential" war industries, they had to go up eventually in virtually all other industries. The substantial increases in the pay of metal workers, shipbuilders, and railroad men in the United

States, like the increases in the pay of munition makers in England, unsettled the economic order. Accepted relations between the wages of various groups of workers were upset. Unrest followed. As soon as the increased wages of munition workers were charged up to other workers, in higher prices and in higher taxes, the other workers demanded the wherewithal to pay the higher bills. But before they received their new wages, the bills were higher still. As money wages went up, real wages went down. So the workers demanded further increases. These increases promptly went into costs, and prices continued to rise. For wages, as a whole, it was an uphill struggle to overtake prices which had started up the hill first and seemed to keep the lead without even a struggle. Thus the vicious spiral of inflation is always a cause of injustice, and so of industrial unrest.

In the United States, the Government added to the unrest and to the mystery by declaring, in various awards, that the demand of wage-earners for increases in wages sufficient to meet the increased cost of living was a legitimate demand. It was not legitimate, for it failed to take into account the goods side of the equation of exchange. There was a shortage of goods for use at home. On account of the War demands of the Government and the reduction in the number of workers available for peacetime production, there was necessarily a reduction in the supply of various kinds of goods available for domestic consumption. Wage increases could not alter that fundamental economic fact. Somebody in this country had to get along with fewer goods than before the War. If any particular group of laborers succeeded in getting wages sufficient to buy what their wages bought before the War, it meant that some other laborers were bearing more than their share of the deprivations due to the shortage of

goods. For example, school teachers and Government employees, because their wages lagged farther behind the cost of living than the wages of railroad employees, were, in an important sense, paying a part of the increase in the wages of railroad employees. What some of the workers and some of the Government agencies appear to have overlooked is the fact that there is no possible way of distributing the money of the country, or controlling its supply, so that consumers will receive more than the existing volume of goods. Under a barter economy, there could be no mystery about this. It was the use of a medium of exchange that is not a standard of value, rather than the War itself, that was the chief direct cause of the increased injustice, confusion, suspicion, strikes, sabotage, and relaxing of moral restraints.

Inflation is Economically Disastrous

In the stress of a nation's need, inflation deceives the people generally, and often the Government itself, by making it seem easier than it really is to obtain the sinews of war — or the after-war sinews of bonus payments. On a boundless expanse of paper currency, any loan whatever can be floated to-day and a larger one to-morrow. It is "easy money." The trouble does not begin until the Government tries to exchange the money for goods; and the trouble for the country does not end until the easy money is offset by hard work. If the process of raising a war loan doubles prices, the Government finds when it spends the money that it can obtain only half the needed cannon and shells. The dollars themselves do not go to the front. Meantime, no pressure has been brought to bear upon the people to produce more and to consume less. On the contrary, as we have already seen, inflation promotes extravagance in consumption; and,

as we shall now see, it also promotes inefficiency in production.

Inflation, it is true, increases profits, and profits stimulate industry: but the stimulus falls like the gentle rain from heaven on the just and the unjust — the producers who hinder as well as those who aid the winning of the war and the winning of the peace that follows. Furthermore, the stimulus is only temporary. Although rising profits at first increase production, they also increase a discontent that soon interferes with production. The object of Government financing in the United States during the World War was necessarily to obtain more goods; and more were obtained as long as increased bank credit enabled employers to put idle people and idle machinery to work. The country soon reached the point, however, where it was employing virtually every man and every woman who was able and willing to work. After that, employers could add to their own staffs only by taking laborers away from other employers. At this point, competition among employers for workers inevitably resulted in higher wages and, consequently, in new demands on the banks for increased working capital. But bank credit created for the purpose of enabling somebody to take workers or orders away from somebody else did not increase production. There was no gain in the efficiency of the workers: on the contrary, the workers, already incensed over what they called "war profiteering," had less incentive to efficiency than ever, since they knew that, if they lost one job, they had only to go across the street to find another job. All this was clearly predicted by a number of economists early in the War. In 1917, Carl Snyder said: "Production, and therefore the actual volume of exchanges, is practically at the limit and has been for a year or more. No expansion of bank credits can put

this production any higher. It follows, therefore, as a practical fact that any expansion of bank loans now means inflation — to all practical intents, dollar for dollar." [13]

Moreover, unusually high profits led to careless business methods; and excess profits taxes led to further extravagance, prompted by the thought that a large part of what might be saved would be taken by the Government in taxes. The net result of thus placing new purchasing power on the market without a corresponding increase in production was a further rise in prices, followed by further inflation, followed by further economic inefficiency. Inflation in Great Britain led to similar results. "War-time production," says C. H. Northcott, "carried on under conditions in which all economic checks and balances were removed, demoralized British manufactures. They became careless of prime and labor costs and of operating expenses. The excess profits tax completed the demoralization, causing them to invest unwisely instead of building up reserves. Inflated credit made their careless expenditure easier and currency inflation prompted reckless purchasing on the part of consumers." [14]

All the apparent evidences of prosperity as prices rise — higher wages, higher profits, increased orders, more extensive advertising, larger national income and expenditure — are gratifying only to people who overlook their monetary significance. There is no warrant for the common belief that "a credit uplift of prices is a sign of normal, healthy business conditions." [15] When the whole situation is rightly diagnosed, these signs of apparent health are recognized as symptoms of an old disease. We may refrain from calling it inflation — that term recalls so many unhappy chapters in monetary history — but

under any other name it brings the same unhappy results.

Deflation is Equally Disastrous

Wherever these results are felt, there arises a popular demand for deflation. The outcry is usually directed against "the high cost of living." But there is not much choice between the remedy and the disease. Deflation does not reduce the real cost of living; but it does bring evils of its own — morally, socially, economically. Our muscles may be sore from climbing Pike's Peak, but we gain little relief from climbing down, only some more sore muscles. Business, which feels the glow of unusual activity as it rushes forward, looks very much dejected when it has to go back. It brings to mind the horse that ran away, much exhilarated by the exercise, but dropped dead at the stable door, after his master had forced him to run all the way home. Nevertheless, as business is now financed, a period of deflation is sure to follow a period of inflation; for, as we shall see in later chapters, bank deposits are extended and goods produced based on markets that turn out to be mirages.

The usual results of deflation were experienced by Japan in the years immediately following the high-price peak of 1881. This typical experience is well described by the American consul. "Prices," he says, "fell as precipitately as they had risen. With this fall in prices, distress and desolation extended over the land, and millions of people who had supposed themselves on the high road to wealth suddenly found poverty staring them in the face, while exacting creditors on all sides demanded the liquidation of debt. Depression and a sense of adversity naturally followed; bankruptcies became common and misery was everywhere present."[16] There was, in fact, a vicious spiral of *de*flation.

Eagerness for higher wages is natural; but higher wages are no benefit to the people as a whole, when the currency is inflated, and prices rise faster than wages. Eagerness for lower prices is natural; but lower prices are no benefit to the people as a whole, when the currency is deflated, and production is curtailed. For, no matter what happens to wages or to prices, people cannot buy any more than they produce. Here, again, we arrive at the most obvious and the most neglected of economic facts. It is the fundamental fact in the process of deflation. Figure 1, which portrays the loss in production during periods of falling prices, shows at a glance why the people as a whole do not obtain as much to enjoy when prices are falling rapidly, as they obtain when prices are relatively stable. We must conclude, with Gustav Cassel, that a prolonged period of falling prices will never be accepted as a wise device of deliberate economic policy.[17]

Summary

Inflation and deflation: neither of these monetary diseases is a cure for the other. Both are disastrous — morally, socially, economically. The dominant economic need of the world is not "abundant money," not "easy money," not "a more elastic supply of money," but a money that is a true standard of value. In an industrial order founded on private property, division of labor and competition, with its interest focused, as we have already observed, on the monetary aspects of nearly all its activities, there is no economic phenomenon so far-reaching in its consequences as unstable money. A shifting price-level is sure to be accompanied by alternate periods of business elation and gloom, with the familiar trend of extravagance, injustice, excessive speculation, "profiteer-

ing," over-production, tight money, business failures, unemployment, and "hard times." "All the power of a government," says Herbert J. Davenport, "and all the skill of the agencies of credit control should be directed to the task of stabilizing the price system — the center and pivot and motor and regulator of all competitive activity." This, let us repeat, is fundamentally a monetary task: there could be no shifting of price-levels under a barter economy, for there would be no such concept as price, no such thing as a price-level. How to prevent these extreme shifts of the price-level and extreme swings of the business cycle — the heights of prosperity and the depths of depression — is *the* economic problem.

CHAPTER VI

MONEY AND THE GOLD BASIS

EARLY in the history of human intercourse, men began to use a medium of exchange. For this purpose they tried innumerable commodities, from primitive times when some use appears to have been made of shells and furs and cattle, down to recent times when certain hard-pressed farming communities in the United States tried to make corn legal tender. It is said, on meager evidence, that tobacco, salt, dried fish, eggs, iron spikes, and bullets have been used for media of exchange. However that may be, there is no doubt that many kinds of money have passed current, from time to time, and from place to place. As they varied widely in their fitness for the purpose, it was natural that in the struggle for existence the fittest should survive.

There is no mystery connected with the fact that cows did not survive as currency. The Greeks, who in the Homeric poems expressed the value of coats of armor in terms of the number of kine they would bring in the open market, were well aware of the fact that cows, however admirable for certain purposes, were not all that could be desired as circulating media. In the first place, they were not easy for ladies to take with them when they went shopping. Nor were they readily divisible in making change, at least not without trouble to the traders and damage to the cows. Nor were they durable: before the owner could spend them, they might lose weight or die. Furthermore, no two cows were exactly alike or of exactly the same value: as a result, arguments were al-

ways in order not merely concerning the value of the goods offered for sale, but likewise concerning the value of the medium of exchange. In short, cows were destined to escape the arduous work done by money — which Bassanio centuries afterward dubbed "the pale and common drudge 'tween man and man" — because they did not possess those traits of a satisfactory currency which are now discussed in the textbooks as portability, divisibility, durability, homogeneity, and uniformity.

There is still another essential attribute of money — termed by Jevons "cognizability"— that helps to explain why gold survived.[1] It is easy to recognize a piece of gold. It is easy, for that matter, to recognize a cow; but an acceptable currency must satisfy *all* the tests, and men have discovered, first in one part of the world and then in another, that no single commodity possesses all the essential qualities in so high a degree as gold. No other commodity, having the other needed characteristics, is so easily carried about as gold: most of us could carry in our pockets, in the form of gold coins, all the money we could afford to spend in a day, without being aware of the weight. No other commodity, equally good in other respects, is also both infinitely divisible and virtually indestructible. If a gold coin had been placed in circulation in the boyhood days of Methuselah, and had since been subjected only to the ordinary uses of currency, it would be much worn, no doubt, but still a gold coin.

The Monetary Basis must be universally desired

But we have not yet told the whole story. Paper money can be made that is sufficiently durable, that is more easily carried about than either gold or silver, and that is just as satisfactory in respect to all the other qual-

ities we have enumerated. Until comparatively recent times, however, paper money did not meet the needs of trade because there was no assurance that it would be generally accepted. Something was needed which was widely desired on its own account — which did not depend for its value solely upon somebody's keeping a promise to give something else in exchange for it. Gold met this test because it was in universal demand for purposes of decoration and for other uses in the arts. Silver, since it also met this test, as well as all the others that we have mentioned, long disputed with gold the right to be the "standard of value," or at least to have its part in a "bimetallic standard." This controversy, although prominent in the history of currency, can throw little light on current commercial problems. In any event, the question was settled long ago: whether or not silver might have been adopted universally as the basis of money, the fact remains that it was not adopted. In some countries gold is still valued as highly for ornament as for money. A débutante in India joyously carries on her person thirty pounds of gold trimmings, with the reckless disregard for comfort that is shown by her fur-bearing sister on a warm day at Atlantic City. In most countries, however, the present demand for gold in the arts depends in part upon the fact that it is used as the basis of money. The greater the demand for gold as a medium of exchange, the more it was desired in the arts: its prestige as money enhanced its value as ornament.

All these requisites of a medium of exchange — portability, divisibility, durability, homogeneity, uniformity, cognizability, and intrinsic value — although still dealt with at length in books on money, are no longer live issues. If we needed nothing more to aid us in carrying on the work of the world than to find a medium of exchange

that satisfied all these tests, the problem would now be settled for most nations by the adoption of gold — settled on better grounds, evidently, than "a sentimental preference." Indeed, it would be settled in such a satisfactory manner that for most people the subject would have merely an historical interest. It would create no more controversy than the use of steel in rails.

A Satisfactory Basis has Stability of Value

However, to be beyond reproach as money, a commodity must have still another quality, and one that is far more difficult to find: it must have a high degree of stability of value. Now gold, as we have observed in the preceding chapters, is not free from wide fluctuations in exchange value. That is one reason why the problem of a stable monetary unit, even in the only countries which are still on a gold basis, is a major interest — perhaps the paramount interest — of business. But having admitted that gold is not absolutely stable in purchasing power — a point to which we shall return presently — let us take due account of the fact that no other basis in recent times has been as effective as gold in curbing fluctuations in the purchasing power of money.

Most of the real evils attributed to the gold basis are the evils of unstable money; and they are evils whether money is unstable on a gold basis or on any other basis. But, as a matter of historical fact, as well established as the multiplication table, the purchasing power of money in recent times has fluctuated less in gold-basis countries than in any others. Says the Ford *Weekly:* "A pound of French silk, or a gallon of Italian olive oil, or a dozen German knives are units of wealth the world over, as is the bushel of American flour, subject in each case to the immutable law of supply and demand. If given quanti-

ties of these articles were traded in on the basis of ancient barter, each trader would receive an adequate value in exchange. As soon, however, as the modern method of finance on the gold basis requires that each article must first be reduced into terms of gold, values are dislocated, and the goldless trader is penalized accordingly."[2] On the contrary, it is in barter trading that the exchange values of goods are most uncertain. This is partly because the inconvenience of barter greatly restricts the markets, whereas it is free and wide markets that tend to stabilize values. Indeed, barter trading could develop no "market price" at all.

Like "Coin's Financial School" and the Bryan campaigners of old, the reformers of to-day attribute business depressions to the gold standard. "Goldless Germany," they say, "is humming, busy, productive. Gilded United States is stagnant, timid, lopsided. The two peoples represent, individually, almost identical industrial units. This conclusively shows that there can be nothing wrong with the American people themselves. Consequently, something else must be wrong. And that something is the gold standard."[3] But this argument does not explain how it happened that a few years ago Germany and the United States, both on the "gold standard," were the busiest and most productive countries in the world; and how it happens that to-day Russia and Austria, the two great nations that have wandered farthest from the "gold standard," are the most stagnant and unproductive of all. "In the United States," it is said, "business is at a standstill almost everywhere, labor is idle, and the productiveness of more genuine capital has been suspended, because every commodity must be reduced to a gold unit of value before it can attain the privilege of exchangeability with some other American commodity."[4] The

fact is that the gold basis, of and by itself, neither causes nor prevents either booms or depressions.

Gold Reserves are used to maintain Convertibility

Gold helps to meet the financial requirements within a country in two ways: first, as currency, and, second, as reserves. When a country is on a gold basis, the amount of gold needed for currency, and the amount of gold coins which in consequence the banks must carry as till money, depend on the volume of business, the habits of the people, and the degree of their confidence in the ability of the country to maintain the circulation of paper dollars on a par with gold dollars. In many European countries during the World War this confidence vanished. In the United States, on the other hand, gold all but disappeared as a medium of exchange, not because there was a premium on gold, but because most people preferred paper money and bank checks. The people adjusted themselves to this change readily and with little protest, even on the Pacific Coast where before the World War gold coins were more generally used than bank notes. The people did not insist on exchanging their paper for gold, even when the banks deliberately put difficulties in the way of free convertibility — not because the people believed in the ability of the country to maintain the circulation of paper dollars on a par with gold dollars, but because, on account of this belief among the few people who did any thinking at all on the subject, all forms of paper money actually did circulate on a par with gold.

Some reformers insist that the reason why the people are satisfied to be on a gold basis despite the difficulty of obtaining gold on demand "is due to the impression, constantly fanned among the masses, that the 'money' they handle is as good as gold."[5] This statement is an error.

People do not accept paper money because they think it is convertible into gold. They accept it because their daily experience has convinced them that other people will freely accept it. If, with money on any other basis, they had the same daily experience, year in and year out, they would continue to accept the money and continue to think nothing about its basis. But that is a large "if." Every country that has abandoned the gold basis has found it impossible to maintain the belief among its people that its fiat money would be accepted as though it were "as good as gold." The use of gold reserves to justify this belief is the second monetary function of gold.

To justify this belief, no country is obliged to keep on hand enough gold to satisfy all the claims of all the people who, as holders of various kinds of paper money, have a legal or customary right to demand gold. No country that is on an assured, convertible basis needs such vast reserves. In the United States, for example, there is an immense inverted pyramid: at the bottom, a comparatively small volume of gold; based on this gold, a larger volume of paper money; and, on top of all that, an even larger volume of bank credit. To keep all these paper promises on a par with gold, only enough bullion is needed to meet actual, legal demands for gold. We know from experience that the maximum demand for conversion that is theoretically possible will never actually be made, just as we know from experience that it would be an inexcusable waste to provide for the theoretically possible, maximum demand on an electric power plant.

"Before the War," says Mr. Edison, "German currency was on a gold basis; to-day she has many millions of gold in the Reichsbank. Isn't she still on a gold basis? If not, at what particular state of her holding of gold did she cease to be on a gold basis?"[6] The answer is clear and

simple. When a country is on a gold basis, it meets its obligations in gold, dollar for dollar, as far as it is called upon to do so. The moment it fails to do so, it is off the gold basis.

Rarely are there any runs on the banks of the United States, although it is well known that even in this country, which has such a large proportion of the world's monetary gold supplies, there is not enough gold to meet all the legal demands that, theoretically, might be made. But because there is not a dollar of gold behind every dollar of money in circulation, the country is bombarded with denunciations of "fake bank notes," "imaginary money," "fraudulent standards." "The deception," it is said, "bleeds the common people for the enrichment of the gold barons."[7] And so shock troops, supplied with large munitions of gold-supported money, are dispatched to destroy the gold standard. It can hardly be called a "deception," however, when every day the United States Treasury publishes the exact figures for gold bullion, gold coin, Federal Reserve bank notes, silver coins, and every other form of money. Furthermore, the so-called deception injures nobody except the "gold barons" themselves, if by that term is meant the owners of gold and gold mines; and they lose merely because, if there were no superstructure of bank credit and paper money on the gold basis, gold would be more valuable than it is to-day. If the "gold barons" have been dictating monetary policies during the past generation, they have sacrificed their own financial interests, for gold has fallen in value. But perhaps we may assume, after all, that some opponents of the "gold standard" are not so concerned as their words imply over what they call the inadequacy of the gold reserves, since they themselves urge the abolition of all gold reserves.

Except in times of crises, we do not know how large the reserves must be to insure convertibility. We do know that during the World War the nations of Europe in their attempts to maintain an adequate gold reserve encountered difficulties which seemed to them insurmountable. From the beginning of the War to 1921, the ratio of gold to note issues fell in England from 118 to 29 per cent, in France from 61 to 14 per cent, in Germany from 45 to 1 per cent; and in some other countries the gold all but vanished. The so-called convertible notes of these countries were merely fair-weather notes. They were exchangeable for gold only when the demand for conversion fell within the usual, narrow limits of quiet times. It is only in a hurricane, however, that a ship's anchor is fully tested; and it sometimes takes a world war to demonstrate whether a country's gold anchor is sufficient to keep it from drifting away upon multitudinous seas of inconvertible paper.

To maintain Convertibility, Gold Reserves must be used freely

To maintain the confidence of the people, gold reserves must be used in time of stress freely and boldly. That is precisely what they are for. To try to protect them when a panic threatens would be like sealing up the fire-extinguishers whenever an alarm sounded. Misers have been found starving in the midst of hoards of gold: banks could fail with their tills full of money. The Boston Five Cent Savings Bank showed a clear understanding of human nature and of the right use of its reserves. When a run started, the Bank paid out money as rapidly as possible. It declined to take advantage of the sixty days' notice legally required of depositors; it employed additional paying tellers at once and kept open additional hours. Naturally, the easier it was to get money out of

the bank, the more contented the depositors were to leave it there. The run was soon over.

It may be worth while to note, in passing, that savings banks would be stronger and could operate safely on lower reserves if they were compelled, in times of stress, to take advantage of the law that requires depositors to give sixty days' notice of withdrawals. For some banks that could meet all demands within sixty days could not do so at once. Because it is their business to lend money, and because they could do business in no other way, it is impossible for either commercial banks or savings banks to meet all their obligations at any one time. This fact should be a matter of common knowledge. The public should no longer be encouraged to count on the right to withdraw their deposits without notice. As long as the option is left, as at present, with the individual bank, the bank has no option at all: it must pass out money with a lavish hand. Confidence must be maintained at all costs.

All this is contrary to the popular notion that the banks hoard money in order to limit the amount in circulation for their own profit. Says the Better Banking Bureau, "It is to the interest of those in control of the banks to contract the medium of exchange." Says the *Palladium:* "Only a very little of the money the Government makes is allowed by the banks to get to the people, [the banks] preferring that the people be dependent on bank credit."[8] According to the *Dearborn Independent*, "Banks hoard money for the same reasons that monopolies restrict production — to be able to secure greater profits on their stock in trade."[9] H. L. Loucks, spokesman for another group of reformers, says that "what we have left of gold coin and lawful money is being rapidly hoarded in the bankers' vaults."[10] These ideas are erroneous, in the first place, because banks lose rather than

gain when the currency is deflated. In the second place, the people, for the most part, determine how much money is handed over to the keeping of the banks: without depositors, most of the banks would close their doors. In the third place, the people and not the banks decide the relative amounts of "lawful money" and of bank credit that are used in daily exchange. When a bank makes a loan of a thousand dollars to a farmer, or to a stock broker, or to anybody else, the one who receives the loan is free to draw out all or nearly all the money in gold, or to draw it out in bank notes, or to transfer the credit to other persons by writing checks, or to leave it in the bank. Or he may use any part of the loan in one way and any other part in any other way. Even though an individual bank may make restrictions concerning the form in which a loan shall be used, the borrower may draw checks which are promptly deposited in other banks where there are no such restrictions. And so it is the choices made by all the bank depositors every day that determine how much of "the money the Government makes" gets into circulation. The banks find out, from demands made upon them, how many dollars of bank notes and of small coins the people use for every dollar of bank credit. The people can easily change that ratio whenever they please. For all these reasons, it is absurd to charge the banks with hoarding currency or curbing the expansion of bank credit in order that they may profit by a scarcity of money.

Arbitrary Restraint is needed upon Issues of Paper Money

The chief purpose of the gold reserve is to prevent depreciation of paper money by adequately providing for its convertibility into gold. This object can be achieved only by limitation of the volume of paper money. But

once the process of inflation is well under way, any limitation, whatever, causes what is called "scarcity of money." After Germany had increased its issues of paper marks more than one thousand fold, merchants were still complaining that there was "not enough money to do business with." In Russia, where so many trillions of rubles were issued every day that the cost of living, according to an official estimate, became 257,000 times the pre-war cost, and where the financial performances of the Government took on the aspects of a comic opera, business was still impeded by a "dearth of currency." This is not surprising. As there are always people who are sure that they would be better off if they had more "ready cash," campaigns for freedom from the restraints of the gold basis occur in every country as regularly as the movements of the business cycle.

Particularly in times of depression, when currency seems unusually scarce, governments are urged to issue "fiat" money — that is to say, money which is supposed to be just as good as any other money merely because governments say so. Such was the Continental money of Revolutionary days in the United States, which the Government insisted was perfectly good money even after it had become nearly valueless. Such were the irredeemable "greenbacks" which were favored in the seventies by a business man so eminently successful as Peter Cooper. Such would be the "Muscle Shoals Greenbacks," if issued according to the plan advocated by men so extraordinarily able, in their own special fields, as Mr. Ford and Mr. Edison.

Mr. Ford proposed to take over and develop the power plant at Muscle Shoals, Alabama, provided the Government would complete the plant. The thirty millions of dollars which seemed necessary for this work, Mr. Ford

declared could be obtained from the printing-presses at little cost to the Government. Mr. Ford was right if only initial costs are considered; but he was wrong if he thought that he had discovered anything new in methods of finance. The history of finance, at least, is not "all bunk." The same plan was carried out in the days of American wild-cat money, until the time came when a Mississippi steamboat captain who asked the price of firewood received the answer, "Cord for cord." Exactly the same reliance on printer's ink brought Russian currency after the World War to the point where it took a bale of one ruble notes to buy a poor hat. Indeed, it was Mr. Ford's proposal, carried out logically in central and eastern Europe, that did even more than the War to demoralize the industry and trade of the world. We say "carried out logically," for if the printing-press is all we need for thirty millions of dollars, why not thirty billions? If one plant is a sufficient basis for currency, why not a thousand plants? If the Government should print money to assist the projects of one citizen, why not all citizens? And with such boundless issues of paper dollars, how would our own currency differ from that of Russia? Eventually, it would differ not at all. Indeed, it is the Lenin-Trotsky policy of paying bills with the printing-press — a method first employed, according to Goethe's *Faust*, by the Devil — that, in various forms, is now being urged upon the United States.

It is true that money issued against anything of value might circulate at par with gold certificates, with or without the fiat of the Government, *provided* the volume of notes were not too large. Modern champions of fiat money appear to have mistaken the reason why a silver dollar buys as much as any other dollar. It is not because the Government says the coin is worth a dollar,

nor because the silver has some value, but because the Government limits the number of coins. If too many silver dollars were placed in circulation, the Government might declare them to be equal to gold dollars, and require everybody to accept them at their face value on penalty of death, and they would still be depreciated dollars. Since the bullion in a silver dollar is worth less than one hundred cents, it has nothing whatever to do with keeping silver dollars on a par with gold dollars; and the silver reserves in the Treasury vaults are of no monetary use whatever. They represent a Government subsidy to owners of silver mines. They are maintained in adherence to a policy that has no more to commend it than would the subsidizing of the shipping industry by the purchase of ships that are never to leave port. Thirty millions of dollars, "representing" the Muscle Shoals project, or Hood River apple ranches, or nothing at all, would not debauch the currency if the issues stopped there. Such an able business man as Mr. Ford could probably stop short of a currency debauch, by making the Muscle Shoals plant yield products that could be sold for sufficient money to retire the original issues of notes: but we could hardly expect Congress to stop with one project. When, however, Congress has to borrow money instead of printing it, automatic stops are provided.

Various other monetary matters are badly confused in the Muscle Shoals project — the meaning of interest, the distinction between money and capital, the theory of bank credit, the factors that change the purchasing power of money — subjects which cannot be dealt with at this point. But we ought not to leave this discussion without a passing reference to two of the substitutes for the gold basis which have been urged most persistently: labor-hours and land.

Labor-Hour Units are Impracticable

The labor-hour as a unit of exchange and a substitute for gold has been proposed many, many times in the past, has been tried recently in Russia, and is now enthusiastically advocated by the Equitist Society. The argument is that all wealth is the product of labor; that labor should therefore be the basis of money; and that, as a matter of justice, every man should be able to exchange the product of his labor for the product of the same amount of labor of any other man. Accordingly, it is proposed that every worker should receive one exchange-unit for every hour he works, and that the price of each commodity should be as many exchange-units as it took hours to produce it. Thus, if it took a hatter three hours to make a hat, he would receive for his labor three exchange-units, and they would entitle him to a book that was made in three hours. The evident purpose of the plan, to do justice to all workers and insure an equitable distribution of all the products of labor, should commend itself to all people.

The difficulties, however, of carrying out the labor-hour plan are insuperable. In the first place, by what means are we to determine how many hours it took to produce a given article? Consider, for example, a copy of the latest novel. How long did it take to make the ink, dies, glue, and thread used in the book? How much of the labor of the author, advertiser, and bookseller are to be charged to this copy of the book? How much of the time of the fireman who stoked the engine that hauled the car that carried the pulp that went to the mill that made the paper the book used? We need go no further to show the impossibility of pricing the book on a labor-hour basis, though we should have to go much further before we had

found all the miners, stenographers, bank clerks, freight agents, postmen, fishermen, salesmen, and so on, whose labor helped to produce that book and to place it in the hands of the man who bought it. In the second place, what is to be done with all the products that nobody will buy at the fixed price — the books that nobody wants, the cakes that were spoiled in the making, the hats that are out of style? How, on the other hand, are goods to be distributed when the demand, at the labor-hour price, exceeds the supply? Which lovers of art are to have the privilege of exchanging their labor, hour for hour, for the labor of our greatest portrait painter? Somebody must decide: the artist could not honor the labor-hour checks of all the eager patrons of art who had the right to present them.

There is a third objection: under a plan by which every man's wages are the same regardless of the work he performs, where are we to get our ditch diggers, our telephone operators, our heads of great industrial enterprises? Why should any one choose the hard or the disagreeable jobs? The fourth objection is also the insuperable objection to Communism. The longer a man took to make a hat, the more labor-hour checks he would receive for making it. Efficiency would soon become an historic virtue. Few workers would find adequate incentives to do their best in any position if rewards bore no relation to achievements. The whole world would suffer, therefore, because of decreased output. Finally, the labor-hour unit would be more disastrously unstable in value than cows, or nails, or hides. This extensive examination of labor-hour units is unnecessary, perhaps, for the purpose of showing the futility of the plan; but it may help to make vivid the infinitely complex work which monetary units on a gold basis now perform daily with almost incredible smoothness.[11]

Land, as a Basis of Money, cannot stabilize its Value

Now others are advancing the equally alluring, equally old, and equally unsound proposal that money should be issued "representing" farm lands. Why not? "Our need is more money," they say, "and we must take another step in the evolution of our medium of exchange and base the increased supply on the best security in the world — productive land. . . . We can no more have too much of the representatives of wealth than we can have too much wealth."[12] This idea makes a strong appeal to many farming communities. Why not eliminate banks? If a farmer needs money to buy land, or even to buy plows and seeds for the land he already owns, why should he either stop planting or be obliged to pay interest on a loan? Why should not the Government issue new currency, based on the land? Then the laborer would have the needed money, production would go forward, and nobody would make profits merely by lending money — which, after all, it is the sole privilege of the Government to issue. This is the most attractive form in which the land-basis argument can be presented. It sounds plausible. It has always sounded plausible.

It seemed entirely plausible to the French people at the time of the Revolution. They issued money which "represented" property. They called the new money *assignats*, because the notes were supposed to be assignments of public land. At first 7000 millions were issued; then 10,000 millions; a few months later, 16,000 millions; and, by the end of the year 1795, 45,000 millions. In an attempt to maintain the value of this land-basis currency, the law declared that any one who gave or accepted it at less than face value should spend twenty years in irons. In spite of the law, the *assignats* depreci-

ated until the holder of a note professing to be worth as much as five United States dollars was lucky if he could pass it off for as much as two cents. It is not true that, because the country was bankrupt, France "would have been worse off without *assignats* than with them."[13] Printer's ink aggravates rather than alleviates the malady of bankruptcy. Massachusetts also found this out when, in colonial days, it issued land-currency. Unmindful of these experiments, Japan, in 1868, issued forty-nine million yen on the "security of land." The usual depreciation in value and the usual fruitless efforts of the Government to stop it by law followed promptly.

Thus, land as a basis for money has always failed to stabilize its purchasing power. The reason is simple. As soon as we issue money against land, we increase our money but not our land. Therefore, money depreciates in purchasing power and land appreciates in dollar-value. Consequently, land has a higher loan-value and for this reason can serve as the basis for even larger issues of money than before. But these new issues still further enhance the dollar-values of land, so that it can serve as the basis for still further issues of new money. And so on, without limit. This is the vicious spiral of inflation. That is why land cannot stabilize money. A ship is not held in place merely because it is made fast to another ship which is itself drifting. In short, whenever we use land as the basis of new money, the dollar-value of the basis itself increases with the increased volume and consequent depreciation of the money. Then we can issue more dollars on the same basis, with the same result, and so on. Thus, land provides eventually for issues of paper money as boundless as Russian rubles.

Nevertheless, people are still insisting that money cannot depreciate if it "represents" land. Every little

while a bill comes before Congress which provides for the issue of paper money up to a certain per cent of the value of any farm lands upon which the owner wants to borrow money. In disregard of the lessons of history, Senator Ladd has introduced a bill which authorizes unlimited issues of paper money based on land, with the futile proviso attached that "any discrimination in favor of gold against the lawful money of the United States, or any combination in restraint of the free and unobstructed circulation of the lawful money of the United States should be a criminal conspiracy against the Government and punished by imprisonment for not less than ten years."[14]

This brings us back to the efficacy of gold as a restraint on the universal tendency toward inflation. The whole world knows exactly what is meant by the convertibility of a paper dollar into a fixed weight of gold. But what is meant by the convertibility of a paper dollar into land? What is meant by a unit of land? Where could the holder of money get it, and what could he do with it? Who would accept it in exchange? How could it be sent across the ocean to settle international balances? Nobody questions the value of land for certain purposes, but for monetary purposes it is more cumbersome than cows.[15]

Conclusion

Many earnest and high-minded reformers, convinced that our economic system does not function as it should, are impatient with a defense of any part of the system. They seem to take the position that because something is wrong, everything is wrong; that because change is the law of progress, any change must be progress. To them a defense of the gold basis seems reactionary and therefore bad. We must agree that it is hopelessly unpro-

gressive to insist that everything is all right when periodically we have surplus raw products, idle factories, idle workers, idle dollars, and no way of getting the materials, machines, men, and money into such relations that they can go on with the work of feeding and clothing humanity. We do not need the perspective of a man from Mars to see that something is wrong. But when there is a hot-box, we cannot set the machinery in motion by seizing hammers and pounding the engine in the wrong place. Not only is valuable time thus wasted, attention diverted from the right place, and the machinery injured, but meanwhile the bungling mechanics work themselves into such bad temper that there is less prospect than ever of eliminating the real troubles. To attack the gold basis of money is to hammer the economic machinery in the wrong place.

CHAPTER VII

MONEY AND THE COMMODITY BASIS

As a basis for money, there is much more to be said in favor of commodities than in favor of land or labor-hours. And much has been said, especially by Henry Ford and Thomas A. Edison. These are names to conjure with! They appeal to the imagination, for both men are resourceful, inventive, Aladdin-like in their achievements. Their proposals on any subject are received with interest. Little wonder, then, that when they turn to money — a subject that touches human interests more frequently than any other — their ideas are heralded with loud acclaim. It is fortunate that such men are trying to find out the meaning of money and directing public attention to the subject. For some day we may contrive to make money better serve its purpose; but we are not likely to achieve a better system, or to retain it when achieved, unless we also achieve a widespread understanding of the ways in which money to-day helps and hinders the work of the world. Without such an understanding, we can never be quite free from the danger of following European countries into economic chaos.

The particular proposals of Mr. Ford and Mr. Edison may seem of ephemeral interest: probably they will soon be forgotten. But error, crushed to earth, will rise again. In the next generation, no doubt, similar proposals will be presented, with all the enthusiasm of a new discovery, by some wizard of science who, because of his conquests in totally different fields, will be accepted by the public as an authority on finance.

Both Mr. Edison and Mr. Ford are not only distrustful of the gold basis, and distressed over the shifting dollar, but eager "to divorce agriculture from the banking system," to aid farmers in obtaining loans easily, and to abolish speculation in farm products. All these ends they believe can be achieved by means of what they call commodity money. In these aims, we should all be interested, for the farmer's problems are real, he has not in recent years obtained what he deserves for his labor, and the rest of us cannot prosper as we should unless the farmer prospers, too.

The Edison Commodity Money Plan

Under the Edison plan,[1] we have concrete warehouses, in charge of Federal officers, built and owned by the Government. The money to build the warehouses is raised by taxation. To these warehouses the farmer brings any basic commodities — cotton, wheat, rice, tobacco, for example — that have been raised on American soil, and upon which he wishes to borrow money. Let us suppose that he brings cotton to the Federal warehouse at New Orleans. The Government agent at New Orleans grades his cotton and hands him two pieces of paper: a mortgage certificate and an equity certificate.

The mortgage certificate the farmer exchanges at any national bank for Federal Reserve notes up to fifty per cent of the average value, for the previous twenty-five years, of the goods he has thus mortgaged. In this way, the farmer obtains a loan of money without incurring any expense for the use of the money. And he still owns the cotton.

His equity certificate is his evidence of ownership. It is like a pawn ticket. He, or any one to whom he sells the certificate, can present it at any time within a year, to-

gether with the exact amount of money that has been loaned on the cotton, and receive the cotton. Thus the transaction is closed. Or, instead of retaining the equity certificate or selling it outright, the farmer may present it at a bank as security for a loan.

If the cotton is not removed within one year, the Government must sell it and thus get back the money it has loaned. This is to prevent an accumulation of goods and to make sure that the money will be self-cancelling. As soon as the farmer repays the loan or the Government sells the cotton, an amount of money equal to that advanced on the mortgage certificate is destroyed. Is there to be an additional gold reserve to support the additional Federal Reserve notes issued under the Edison plan? We assume not, for the plan embodies no means of providing additional gold or of changing the present reserve requirements. This, in all essentials, is the Edison Commodity Money plan.

It involves Further Government Control of Industry

Its specific aims and methods deserve consideration, one by one. But, before coming to a detailed examination of the plan, most men will be impressed by the fact that it involves additional taxes, additional corps of political appointees, and a vast extension of Government control over industry. Consider merely the most obvious of the political aspects. If the special privilege of borrowing money without interest is really a boon and is granted only to certain groups of producers, the list to be changed from time to time as the experiment proceeds, somebody must decide who are to be the specially favored groups. And whether that somebody is Congress or Federal warehouse directors who are subject to partisan appointment and removal, the question who is to receive

"free" money remains in politics, and becomes most urgent as election day approaches.

Subject also to the regulation of Government officers would be the throwing upon the markets of unclaimed commodities in Federal custody, which might become necessary in times of depression; and the experience of the Government, in trying to sell surplus war supplies, leaves no doubt that great political pressure would be brought to bear to prevent the custodians of mortgaged farm products from offering them in the markets whenever such offerings would affect prices — which is at all times. Furthermore, it would take an army of Government officers to determine exactly which sacks of sugar, and cotton, and wool, for example, were grown on American soil, and which ones had previously been used as security for Government loans.[2] As a rule, nobody could tell, merely by inspecting the products, where they originated, or how many times they had been stored and withdrawn. Yet the Government would have to tell in order to prevent accumulation of commodities. Other political complications will occur to any one who tries to figure out exactly how the plan could possibly be put into effect.

Most men, therefore, no matter how heartily they may approve the purposes of the plan, will look upon its political aspects as an initial cause for concern. During the World War, Government regulation of business was considered a necessary evil, to be tolerated, in spite of its waste and bungling and injustice, because the peacetime organization of industry is not adapted to the business of waging war. Great economic loss was inevitable. But every one, except some of those who, at the expense of the others, profited by Federal control, looked forward eagerly to the resumption of private management.

There were few men in any branch of production or distribution who did not either gain unfairly or lose unfairly because of Government activities. And, as the War piled up further evidence of the inefficiency of the Government in the management of business, the demand arose, from coast to coast, for "less government in business, and more business in government." There is no gainsaying the fact that there is a presumption against any plan that sets up new, permanent staffs of Federal officers and further Government regulation of industry.

Is Commodity Money sounder than Gold Money?

This mere presumption against the plan, however, should not stand in the way of a careful study of its individual aims. Mr. Edison contends, first of all, that his commodity dollars will be sounder than gold dollars because "there in the warehouse, in the Government's custody, lies the actual wealth, the things we eat and wear and must consume to live, not in the minus ratio of one to two, as gold may be held to money, but in the plus ratio of two to one."[1] At first, he says, only a few basic commodities are to be accepted, such as grain, cotton, wool, rice, legumes, fats, flax, and tobacco. Manufactured articles will not do: great care must be taken in selecting the goods upon which new money is to be issued.

Now, if the specific commodity against which money is issued means anything at all to the holders of the money, it must mean that the money is redeemable in that commodity. For what comfort would it give to the owners of paper dollars issued against wheat to know that the wheat was safely stored somewhere, if they had no claim against it? There is still great wealth in Russia, but a paper ruble is next to worthless because it is not a legal

claim on a specific weight of gold, or a specific weight of anything else. That money *represents* wealth is not enough; but many reformers mean nothing more than that when they say that money should be "*based*" on commodities.

Since the World War, new enthusiasm has been aroused over the old proposal that currency should be issued on the security of "property of all forms" — that everybody should have a right to demand that money be issued representing anything of value he happens to possess. In 1921, H. C. Cutting maintained, in *The Strangle Hold*, that "commerce has now outgrown credit based on one commodity, and requires a system of credit based on all commodities of value."[3] Free coinage of silver was rejected: now the demand comes for free coinage of turnips and tripe and everything else. In 1922, C. J. Melrose issued a volume on *Money and Credit* to prove that we should abandon the gold basis and substitute "a currency of which every unit stands for a true credit — a certificate of delivery."[4] But he fails to indicate how the new money could possibly be convertible into the endless variety of delivered commodities. "My solution," says the versatile Charlie Chaplin, "would be to eliminate the gold standard and have the Government issue currency based on production." It is to be hoped that this solution will never become as popular as the proposer; for, if coins or notes are to be limited merely by what they represent, it would do just as well to have them represent the energy of the sun, or the estimated number of fish in the ocean. Unless "representation" means *convertibility* on demand into a commodity freely acceptable in exchange for goods of all kinds, the commodity basis does not necessarily guarantee the value of the money. Indeed, history is replete with the failures

of frail human governments to limit the volumes and thus maintain the values of their *inconvertible* paper money.

If, then, a warehouse full of tobacco is the bed-rock basis that guarantees the soundness of the notes that are issued against it, these notes must be redeemable in tobacco. They are, in fact, Federal Tobacco notes. The plan must provide, in like manner, for Federal Flax notes, Federal Salt Fish notes, and so forth. Furthermore, there would have to be as many different kinds of Salt Fish notes as there were kinds of salt fish. Every one would need to have at hand the latest quotations on all products the market value of which fell below or dangerously near the established fifty per cent loan value, in order to estimate the relative values of different kinds of dollars. Everybody would have to observe carefully whether he had Grade A Kippered Herring notes or Grade X Salt Cod notes. If there was a strike of bituminous coal miners, presumably he would hoard Bituminous Coal notes. If there was a slump in cotton, he would try to get rid of Cotton notes. To be sure, he would not have to reckon with Youngstown Coke dollars and Rumford Falls Paper Pulp dollars, as soldiers in France had to reckon with Bordeaux francs and St. Nazaire francs; for, under the Edison plan, all dollars would be issued by the Federal Government. But the currency would be just as unreliable and just as confusing; that is to say, if the value of each dollar depended on the value of the specific commodity against which it was issued. The unreliability would be due partly to the fact that farmers would naturally be most eager to borrow from the Government on products the market value of which was most precarious, and on which private banks would not lend any money at all.

Suppose we assume, however, that the various, stored

products are not to be segregated as security for separate issues of notes, but that the total wealth in the warehouses is to stand behind the total volume of notes. We have not thereby solved the problem of redemption. If there were one million dollars in commodity notes outstanding, what would it mean to say that a one dollar note was redeemable in a millionth part of the stored products? Of what would the holder's share be composed, how could he collect it, and what could he do with it? In any event, what right would he have to demand any part of these products, since they are all mortgaged, and the Government is under obligation to keep them for ultimate delivery to the individual owners?

Consider, on the other hand, the simplicity and definiteness of a gold-secured dollar. All the world knows precisely what is meant by the convertibility of a paper certificate into 25.8 grains of gold—.9 fine. All the world accepts the gold in exchange. Its value is known in every market. It is readily tested, stored, preserved, divided, transported. Moreover, gold reserves are maintained for the very purpose of conversion and for no other, and are available on demand.

Is Edison Money really Commodity Money?

From one of Mr. Edison's authorized statements, however, it seems that his plan does not provide for Federal Tobacco notes, Federal Fish notes, and the like. In fact, it does not provide for any new kind of money whatever. No matter what commodity the farmer deposits with Federal agents, he takes his mortgage certificate to a national bank and there exchanges it for Federal Reserve notes. They are just like any other Federal Reserve notes; just like the notes, for example, that are now issued by the Government, when the First National

Bank of Boston rediscounts paper representing a shipment of shoes and asks the Reserve agent for currency. When the farmer examines his Edison paper dollars, he finds upon them nothing to indicate what commodities have been entrusted to the Government.

But, if there is nothing more than this to make commodity money sounder than gold money, this part of the plan vanishes into thin air. The Edison money is not sounder than gold money, for it *is* gold money. Every Federal Reserve note issued under the Edison plan, like every other United States dollar of every kind, is worth precisely 25.8 grains of gold; not because a farmer has delivered barley or beans or anything else, but because the Federal Reserve system has enough gold to guarantee the convertibility of all United States money up to the limits of the demand for conversion. It would make no difference in the purchasing power of the money borrowed by the farmer whether he deposited wheat or wooden nutmegs, bags of barley or empty sacks. Anything at all will do as long as the convertibility of the notes is assured by an adequate supply of gold. "Gold money is not good enough," Mr. Edison declares. "It's a fiction."[1] Whereupon he proposes to issue Farmer's Federal Reserve notes, their convertibility dependent on the existing gold reserves, and insists that they will be stronger than gold money.

"Why should bankers object to commodity money?" we are asked. "Is not the Government already creating commodity money every time it issues Federal Reserve notes against commercial paper? When a dealer obtains money from a bank in connection with a consignment of leather or sewing machines, does he not obtain commodity money?" The question is a natural one. The answer is "no." "Well," says Mr. Edison, "billions of money

are now issued against commercial paper, Liberty bonds and Stock Exchange collateral, impalpable things you can't eat or wear. What's that?"[1] The answer is that money is never issued against stock exchange collateral, and when it is issued against commercial paper or bonds it is not commodity money. If Mr. Edison wished to borrow money on a stock of phonographs, and if a Member Bank of the Federal Reserve System presented a warehouse receipt for the phonographs to a reserve bank, and received Federal Reserve notes in return, it would receive gold-supported money. There would be no point in printing "Phonograph Dollars" across the face of each note. Nobody who held these dollars would care what Mr. Edison had in his warehouse, or what happened to the market for phonographs, or to the assets of the bank; for the value of these dollars would be determined not by phonographs but by gold. Reserve notes may now be issued that (in Mr. Edison's use of the term) are "based" on shipments of bananas that spoil on the way, or shoes that promptly go out of style, or motors that will not run: but these details do not disturb the holder of the notes, for they are payable, not in bananas, or shoes, or motors, but in gold. In short, they are not commodity money at all: they are gold money.

By issuing even a small volume of this money, says Mr. Edison, "you will have made that much of the country's money better: you will have taken some of the load off gold."[1] On the contrary, you will have added precisely that much to the load. And if the gold reserves become insufficient to support this additional load, either of two courses will be open: more gold can be obtained, if there is any way of obtaining more gold; or, the dollar of the United States, having lost its anchor of gold, can be left to drift away with marks and rubles. If the first

course is taken, the Edison notes will not be sounder than gold notes: they will be gold notes. If the second course is taken, Edison notes will not be as sound as gold notes: they will be depreciated paper notes.

Would the Edison Money be Stable in Purchasing Power?

Mr. Edison aims to produce a money that is not only sounder than gold money, but a money which, he says, is "absolutely non-fluctuating in relative value, that is to say, in purchasing power." This second aim is of paramount importance. If Mr. Edison could provide the world with a monetary unit that would maintain its exchange value, year in and year out, he would do more to benefit humanity than even he has done with all his brilliant achievements. But his commodity dollars, as we have just observed, are gold dollars; and gold dollars, as we have all observed to our sorrow, can fluctuate widely in purchasing power. Once the Edison notes are placed in circulation, there is nothing to distinguish them from other Federal Reserve notes. Consequently, there is nothing to give them greater stability of value.

Furthermore, the volume of Reserve notes, however they originate, compared with the volume of bank deposits subject to check, is a minor factor in determining the price-level. Since not far from nine tenths of all business that involves a medium of exchange is done by means of bank checks, any plan for stabilizing the dollar that ignores bank credit ignores the major part of the problem. Never mind, says Mr. Edison. "One thing at a time. Let's make money itself absolutely sound as the first step. Then the credit problem can be taken up. That is a vast problem. I can't do anything with it in my mind — not yet. I put that aside."[1] Mr. Edison can set aside the credit problem mentally, if he chooses, but he

cannot for a moment set aside the influence of bank credit on the value of his new notes. Their value, along with the price-level, is affected at one and the same time by every dollar of currency in circulation and by every dollar of bank credit in circulation. He could not possibly carry out his plan of "experimenting on a small scale without disturbance to the existing system." He could not experiment on a small scale by controlling the level of the water in a part of a reservoir, while exercising no control over the main source of the water supply. No more readily could he maintain an even price-level by making currency sound, as a first step, while ignoring bank credit.

Presumably, however, what is called an experiment is regarded as a step toward the ultimate abolition of the gold basis. It is hoped that the new money will tend to displace gold as a single arbitrary "standard" and eventually cause gold to be treated like any other commodity. In order to deal fully with the Edison plan, therefore, we must consider its possibilities as a stabilizer of monetary values when all gold reserves are gone.

"Since the relative value of the earth's produce appears to be constant," says Mr. Edison, "a money unit representing basic commodities and nothing else would be equally constant, that is, non-fluctuating in relative value. The true relative value of what we eat and wear goes neither up nor down, or very little. It is the purchasing power of money that varies."[1] At other points in his argument, however, Mr. Edison assumes that the value of money does not vary. "While the gold miner can bring in his commodity and get full value," he says, "any attempt of the farmer to attain parity is met by a glut and a lowering of the price of his commodity." This is an illusion. The farmer and the miner get "full value" for their products in exactly the same sense. Each ob-

tains the full exchange value of his product at the moment of sale. As the value of other things goes up, the value of gold goes down; and vice versa. The values of all things, including gold, are subject to the forces of supply and demand. Nothing whatever is constant in purchasing power. The *Dearborn Independent* is deceived by the same illusion when it says: "The law of supply and demand does not affect gold, or gold is not subject to the law of supply and demand, as we will, and this being the case, it is obvious that gold cannot be considered a commodity."[5] If one bases his monetary theories on this fundamentally false premise, he can arrive by means of perfectly valid reasoning at the most astounding conclusions. It is not surprising, therefore, that readers who seldom think of questioning the truth of the premises are much impressed by the plausible Edison-Ford arguments.

Is the Exchange Value of Farm Products relatively Constant?

Returning now to the contention that the relative value of what we eat and wear goes neither up nor down, we may consult price-statistics. As an example of what we eat, we may take sugar. Not long ago, the retail price of sugar rose from five cents a pound to about twenty-five cents a pound. That was an increase of about four hundred per cent. In the meantime, the general price-level, which is an index of changes in the value of money, did not rise more than one hundred and fifty per cent. As an example of what we wear, we may take leather. The high price of certain grades in 1919 was nearly four hundred per cent above the low price of the following year. In the meantime, the price-level, that is to say, the exchange value of gold, had not changed more than forty per cent. Evidently, sugar and leather fluctuated in

value much more than gold. Nor are the exchange values of wheat and cotton and corn constant, either for short or long periods of time. The price of cotton at New York, during the years 1870 to 1900, ranged from 5 cents a pound to 27 cents a pound. The price of wheat at Chicago, during the years 1900 to 1909, ranged from 61 cents a bushel to 160 cents a bushel, and the price of corn, from 30 cents to 88 cents. From May to October of 1898, the price of wheat at Chicago fell from 185 cents to 62 cents. From July to December of 1902, the price of corn fell from 88 cents to 43 cents. During 1904, the low price of cotton in New York was 6.8 cents and the high price was 16.6 cents.[6] During the World War, the fluctuations in the prices of many commodities were even greater. That the prices of twenty basic commodities, from 1916 to 1920, rose much more rapidly than the cost of living is shown in Figure 5.[7] The main causes of many of these fluctuations were non-monetary: and in no case was there an exactly corresponding change in the purchasing power of gold. Neither is it true that in England wheat has always varied comparatively little in purchasing power. Between the base years 1867–1877 and the year 1907, according to Sauerbeck's index[8] of general prices in England, covering forty-five commodities, only eight — namely, sugar, tea, copper, tin, jute, hides, petroleum, and indigo — varied in exchange value more widely than English wheat. The index numbers for the average price of English wheat varied from 137 in 1855 to 55 in 1907, while the index number for the prices of all the commodities in the Sauerbeck list varied from 99 to 80. The only commodity that had virtually the same purchasing power in 1907 as in the base period was nitrate of soda; but, so far as we are aware, nobody has urged the adoption of nitrate of soda

as the standard of value. The fact is that the value of gold sometimes moves in the same direction as the value of certain farm products and sometimes in the opposite direction. Mr. Edison has cited periods in which the purchasing power of gold has varied more than the purchasing power of certain farm products. Others could be

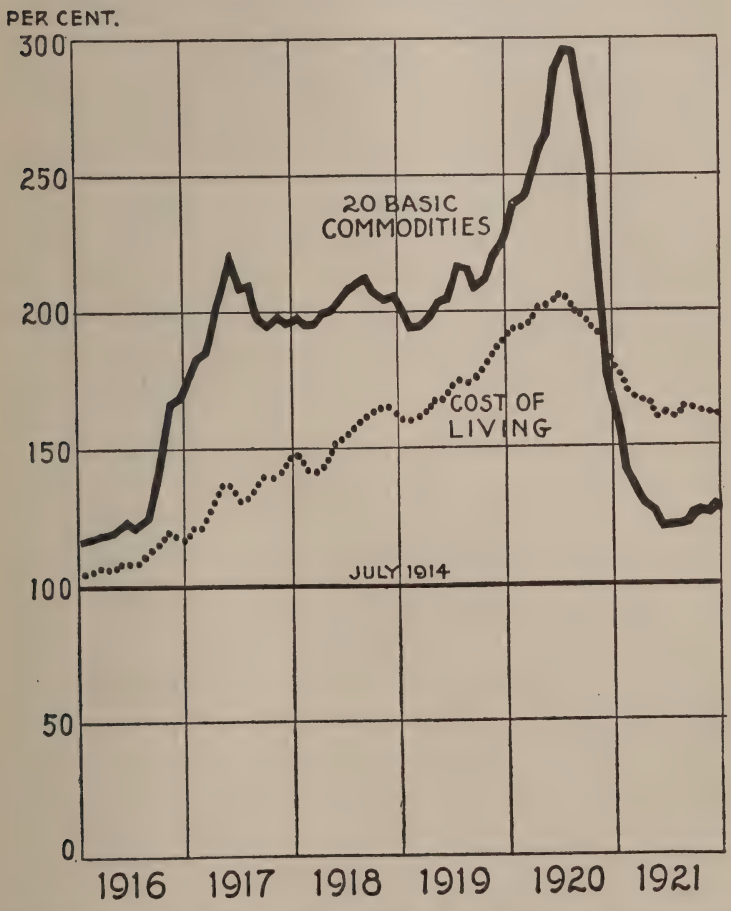

FIGURE 5. PRICES OF BASIC COMMODITIES AND COST OF LIVING, 1916–1921

cited. The fact remains, however, that the relative value of farm products — that is to say the power to purchase other things — is not constant.

Is the Volume of Farm Products an Index of Volume of Trade?

If Mr. Edison had proposed that the total volume of money in circulation should be increased in proportion to the *total annual increase of trade of all kinds*, he would have made a proposal which, theoretically at least, would have tended to stabilize the purchasing power of money. And he would then have been face to face with the problem, as yet unsolved, of devising a practical method of controlling the volume of money on this basis.

From 1880 to 1920, as shown in Figure 6, crop production increased at a rate slightly in excess of two per cent a year, which was about the same as the rate of increase of population. But the average annual increase in total production in the United States for many years seems to have been about four per cent. If the volume of money in circulation had increased at the same rate, it is probable that the dollar would have varied less than it has varied in purchasing power. But Mr. Edison offers no such proposal as this. On the contrary, he would "base" issues of money on the volume of commodities placed in storage rather than on the volume of production, and on a few commodities rather than on all commodities. Now, there is no guarantee that the annual production of any farm product or any group of farm products will vary directly with the annual production of all commodities. We know, on the contrary, that variations in the crops of wheat, cotton, tobacco, and so forth, depend largely on certain factors, notably insects and the weather, which have comparatively little influence on the volume of production of other goods. Therefore, the volume of farm

products at best in any given year is an unreliable index of the total volume of production: and evidently changes in the total volume of production are better measures of needed changes in the volume of money than changes in a few products; since all goods require a medium of ex-

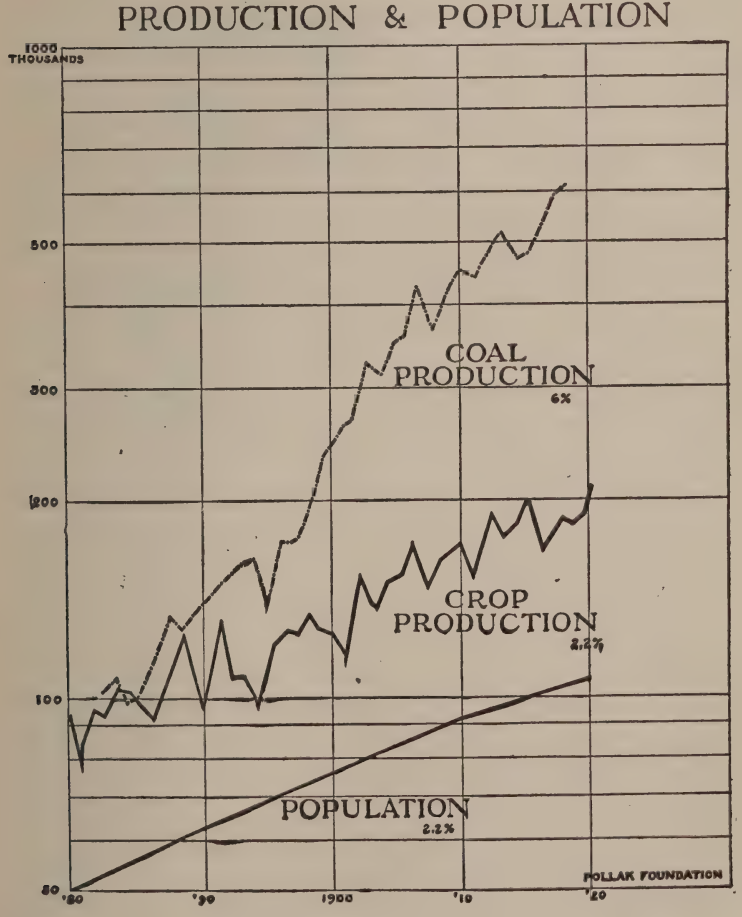

FIGURE 6

change, finished goods as well as raw materials, manufactured goods as well as farm products, imported goods as well as home-grown goods, luxuries as well as basic necessities.

In any event, however, changes in the volume of trade are better indications of needed changes in the volume of money than changes in the volume of production. It may yet be possible to attain a nearly perfect monetary system by making changes in the volume of money depend solely and promptly upon changes in the volume of trade. Where most of the reformers err is in assuming that the gold basis of money interferes with such a plan. It does not.[9]

Does the Edison Plan tend to balance Supply and Demand?

The Edison plan provides an even more objectionable basis for currency than the total volume of farm products. In so far as his plan was effective, the currency would expand, not in proportion to the increased production of farm products, but in proportion to the amount that farmers desired to use as security for loans. If the plan worked, the expansion of the currency would thus be at the option of one group of producers.

There are still other flaws in the scheme. Farmers, naturally, would most desire to store their products and hold them for later markets in periods of rapidly advancing prices; that is to say, at times when the purchasing power of the dollar was shrinking. At such times, therefore (still assuming that the plan worked), they would cause expansion of the currency. But it is precisely at such times that further expansion of the currency is most objectionable, because it tends still further to reduce the purchasing power of the dollar. On the other hand, when prices were falling, many farmers would naturally try to

protect themselves from further loss by withdrawing their stores and repaying their loans, thus, according to the Edison plan, reducing the volume of money in circulation precisely when, in the interests of a stable dollar, the volume of money should be increased. Consequently, the Edison plan, though aimed to stabilize monetary values, would have exactly the opposite effect.

Indeed, it would have the opposite effect no matter when farmers deposited or withdrew their products: for steady prices depend mainly on the balance between the volume of goods on the market and the volume of money offered for goods. How that balance is upset under our present monetary system we shall explain in later chapters. Here we should note in what way the Edison plan upsets the balance. Under that plan, let us say, a farmer delivers two thousand bushels of wheat to the Government and the Government delivers one thousand dollars in new money to the farmer. But when the farmer decides to sell the wheat, he repays the loan and the Government destroys the money. Thus the volume of money is increased precisely when goods are stored: the volume of money is decreased precisely when goods are marketed. In other words, each transaction begins by placing in circulation money without goods to match the money, and ends by placing in circulation goods without money to match the goods. Dollar-demand is created as the supply of goods is withdrawn: the supply of goods is created as dollar-demand is withdrawn. Far from steadying the price-level, this is precisely the way to unsteady it.

Would the Plan enable Farmers to borrow More Money?

Even if this commodity-basis project would not provide a sounder or more nearly stable currency, would it not at least enable the farmer to borrow more money on

his products than he can now borrow? Apparently not. It seems that the Government is not expected to run many risks, for the farmer is allowed to borrow an amount no greater than one half the average value of his product for the previous twenty-five years. But since the index of prices has risen from 90 in 1896 to 269 in 1918,[10] the amount that the farmer could borrow on most products would be much less than half the *present* value of the products. It would be much less, therefore, than the farmer could borrow directly from the banks — that is to say, on such of his graded products as had not fallen far below the value of previous years. And, on all products that could not be graded, we assume no Government loans would be made, for there would be no way of determining the twenty-five-year price average.

The suggestion is offered, however, that the farmer, having obtained the stipulated loan from the Government on his mortgage certificate, could then offer his equity certificate to a bank as security for an additional loan. But the equity certificate is virtually a second mortgage, and no bank would prefer a second mortgage to a first mortgage. Suppose the Old National Bank of Spokane was willing to lend a Walla Walla farmer $800 on the security of a warehouse receipt for one thousand bushels of wheat. Suppose, however, the farmer had deposited the wheat in a Federal warehouse and had obtained $500 from the Government. Certainly, the bank would not lend the farmer $300 on the equity certificate. The protection of the bank and its freedom of action would be greater if the farmer relied on the bank for the entire loan; for in that case the bank, in an emergency, could realize on its security without being obliged to pay $500 to get the wheat out of storage. Consequently, as a rule, and except in times of severe money stringency, the

farmer can now borrow more money from a bank on standardized farm products than he could borrow under the Edison plan. It is long-term loans that the banks do not supply him: but neither does the Edison plan. All we can say with certainty is that the Edison plan would enable the farmer to obtain some money at any time, regardless of the present value of his commodities and regardless of the condition of banks or markets.

But this feature is not fair even to farmers: it involves unjust discrimination. It fixes the loan-values of all products, absolutely, uniformly, and arbitrarily: it ignores the relative prospects of different commodity markets. Only by the merest chance would such a method give a fair loan valuation for any product whatever. Fifty per cent of the average price for the previous twenty-five years would be too high a loan-value for some commodities and too low for most of them. On account of an increased demand for a certain grade of tobacco, for example, and a sudden scarcity of that grade, there may be assurance of a market price ten times as high as the previous average. Or, on account of the discovery of a substitute for cotton, let us say, the price of cotton may fall far below the average of recent years. With such details, the Edison plan is not concerned. Its loan-values appear to be fixed on the assumption that the forces of supply and demand have influenced prices for the past twenty-five years, but are of no immediate use in determining present loan-values.

The general practice of the banks is not only fairer to farmers, but it is sounder business. There is no economic justification for basing the loan-value of anything upon average prices in past years. Sound banking practice looks to the future. A bank — for the protection of its depositors, if for no other reason — must consider above

everything the prospects of getting its money back: and a farmer's prospects of repaying a loan from the sale of his product depend entirely on future prices, not at all on past prices. Last year's runs do not count in this year's game.

• We have said nothing as yet about the claim that the Edison plan would tend to abolish speculation in farm products. And there is not much to be said. To begin with, the assumption is unwarranted that organized speculation is detrimental to the interests of farmers. Many students of the subject believe that organized speculation tends to provide continuous markets, to curb price fluctuations, and to distribute risks among those who are best prepared to meet them. Perhaps the farmer would be worse off if he had to stand all the risks of changing prices. But we may let that pass, for there is nothing in the Edison plan that would tend to abolish speculation. Even after the farmer had stored his products and obtained a loan from the Government — a loan not as large as he can now obtain ordinarily from a bank — he would still be free to sell his products outright to speculators. The farmer would have all the inducements to sell that he has to-day, and speculators would have all the inducements to buy.

Does the Commodity Money Plan involve Inflation?

We have already spoken of the injustice of any plan which really provides free loans to any group of workers at the expense of their coöperating fellow workers in other fields. We are assured, however, that the Edison plan provides money for the farmer at virtually no expense to the Government or to any one else. All the Government has to do is to print the money. What could be simpler? Here we come to the most dangerous fallacy in

the whole project. It is dangerous because of the universal desire to get something for nothing, and the human incapacity for learning, even from the most painful and prolonged experience, even from the tragic, current experience of Europe, that it is impossible to devise monetary schemes that will produce something out of nothing.

Here is the gist of the matter. Money will buy whatever is produced — not a particle more by any trick of alchemy, or legislation, or finance. The Russians, having multiplied their money 257,000 times, cannot buy as much with it as before, because they are producing less. When we print more money, there are no more goods for money to buy: not a single additional plow, or hat, or potato. There is the total national wealth, precisely what it was before the printing-presses were set in motion, except that certain rolls of paper have been stamped and cut up into bills. Consequently, each unit of money buys fewer units of goods. Those who get the newly printed money can buy more goods than before; all other people can buy fewer goods than before, because their money has fallen off in purchasing power. Since there are no more plows, and hats, and potatoes, and so forth, to distribute, if some people get more, others must get less. It follows that if the Government prints money to lend to farmers free of charge, thereby increasing the money in circulation without increasing the goods that money will buy, the farmers gain immediately at the expense of all the rest of the population who spend money. If the Government is to spend more than its present revenue, it can obtain the additional money by one of two methods: by inflating the currency, which is surreptitious taxation of everybody who spends money, or by directly increasing the taxes. In either case. it causes economic loss to the nation.

Inflation under the Edison plan is limited mainly because, on account of its indefensible discrimination, most groups of producers of goods and services are not allowed to participate. If all groups were included, as in fairness and in politics they would have to be — and if the plan *actually* provided all these groups with more money than they could obtain from the banks — eventually the possibilities of inflation would be vast. Estimated by sources of production, the total income of the United States is now in excess of fifty billions of dollars. The total money in circulation, including bank deposits subject to check, is not far from twenty-five billions. It follows that the annual production, if used as a "basis" for new issues on the Edison plan, could at once greatly increase the volume of money in circulation. Every addition to the monetary supply would tend to raise prices. The higher prices became, the higher would be the loan-value of a given volume of goods. The greater, therefore, would be the volume of new money that could be issued on the basis of a given annual production. Prices, therefore, would become still higher; and so on up an endless spiral.

In order to maintain the convertibility of such a vast volume of paper money, even the United States would not have enough gold. Such a degree of inflation, therefore, would involve the abandonment of the gold basis, and this would almost inevitably lead to the abandonment of even such restraints as the Edison plan provides. The more inconvertible money a country prints, the more it demands. Even in Russia, where financial printing-presses hold the world's record for volume, where new issues of two hundred trillions of rubles per month stagger the imagination, the people complain that "there is not enough money to do business with." Without the arbitrary restraint of the gold basis, and with

Soldiers' Bonus inflationists, Muscle Shoals inflationists, and sundry other kinds of inflationists constantly pressing their claims upon Congress, it is not at all certain that the United States, once well on the road to financial chaos, would in the end be outdone by Russia.

This is all predicated on the assumption that the plan would "work" — that it would enable producers to obtain far more money than they could otherwise obtain. But it would not unless — as would very likely be the case, once the plan was put into effect — Congress extended the list of acceptable commodities and the fifty per cent valuation limit.

Can we safely abandon the Gold Basis?

From this account of the advantages of gold as a basis of money and the disadvantages of various substitutes for gold, it appears that no basis has ever been used that is as satisfactory as gold. Indeed, the merits of the gold basis are so obvious, and attempts to do without it have been so disastrous, that many have concluded that when all the money of a country is really and freely convertible into gold, nothing further can be desired. We must admit, however, that the gold basis is not ideal. The annual production of gold bears no known relation to the changing monetary needs of the world: the yearly output has always been subject to accidental discoveries and to various other unpredictable influences. Consequently, as we have said in previous chapters, gold has failed in the past to insure a stable monetary unit. In the future, its failure may be even greater unless, in addition to the gold basis, we adopt more satisfactory methods than have yet been employed for preventing extreme fluctuations in price-levels.

Nevertheless, we must not lose sight of the fact that

an absolutely invariable standard of value is impossible. If the processes of evolution continue unchecked by current controversy, there can be nothing unchangeable to which a monetary unit may be related. None of the schemes for maintaining the value of units — not even Dr. Fisher's plan for stabilizing the dollar[11] — has a perfectly stable basis. Nowadays, the favored basis is a collection of commodities. But even such a standard, although apparently the best that can be found, will change from time to time, as new products appear and new needs arise. It is said that in Connecticut in 1921 there was only one horse to every 2395 motor cars. The item of hay in the family budgets of a century ago and the item of gasoline in the family budgets of to-day show that "commodities used by an average family" is a shifting standard. For this reason, as Dr. Fisher is well aware, even if we could, by shifting the weight of the dollar, keep it in approximately fixed relation to an index number of prices, the commodity basis of the index number would itself be unstable. But this is not a valid objection either to the use of index numbers or to attempts to stabilize the dollar. In the midst of a world in which nothing is stable, we nevertheless succeed in attaining degrees of stability sufficient for most human enterprises; and we may yet succeed in attaining a sufficiently stable monetary standard.

"Must we always remain on a gold basis? Is it beyond the wit of man to devise any equivalent method?"[12] These questions of Mr. Edison, the experience of the world is insufficient to answer. Until, however, some basis is proposed that is less elusive than land, or cosmic energy, or labor-hours, or anticipated production of fertilizers, or the credit of the nation, or even stored farm products, we should focus our attention on what we have

ventured to call one of the two outstanding lessons of monetary history: namely, the fact that the gold basis, in spite of the fortuitous output of mines and the equally fortuitous acts of legislatures, has come nearer than any other basis to maintaining stability of the monetary unit.

The present system of the United States, with its gold basis, is far from perfect in all its details; but the inconvertible paper systems of Russia and Austria and Germany are not only defective in details, but without any stabilizing support in their foundations. The European nations which have lost the support of the gold basis appear to have no prospect of restoring economic relations, foreign and domestic, which they all desire, until they get back upon a gold foundation — on some parity, new or old — and thus get rid of their inconvertible paper currency. When we think of the way in which the United States dollar shrank during the World War until it had lost more than half its purchasing power, we look with scorn upon the term "gold standard"; but when we think of the precipitous fall of the German mark from a value of about twenty-four cents to less than one hundredth of a cent, we look with some respect, at least, upon the gold basis with its relative stability. Confusion is better than chaos.

It may be admitted that the use of any gold basis at all is a concession to human weakness. So is the use of jails. Thus far we must go with the critics. If human beings were quite different, and if their political representatives could be counted on to act with adequate knowledge and complete wisdom, it might be possible to develop monetary systems that would automatically adjust themselves to fluctuating business needs, and release for the arts the world's stores of gold. No arrangement seems ideal which requires the hoarding and carrying back and

forth across the oceans of vast stores of gold which men have dug from the bowels of the earth and refined only with the hardest kind of labor. But there is no immediate need of devising an ideal system, for there are no communities of ideal men to use it. If all men were honest, the world could do away with vaults and prison bars and thus save tons of iron and steel. War is an utter waste: if nations were sufficiently wise, they would get on without armaments. The gold basis also involves waste: if nations were sufficiently wise, they would do without it. But nations are *not* sufficiently wise to abolish at once their prisons, or armaments, or gold reserves. With humanity as it is, no nation has ever kept its paper money within bounds without arbitrary restraint.

We may admit the possibility that, in some far distant day, there may be such a widespread and accurate knowledge of the dependence of general welfare upon stable money and such a sound understanding of foreign trade that men will need no metallic restraint upon their experiments with the currency. Meantime, we have the satisfaction of knowing that the waste involved in storing and transporting gold is a minor matter: the people of the United States pay far more each year for chewing-gum than for the maintenance of gold reserves. Indeed, when we consider the magnitude of the interests involved, the waste seems negligible. Under present world monetary conditions, a nation may lose more material wealth in a year by cutting loose from its anchor of gold reserves than is required to maintain those reserves for a generation. When business men object to the maintenance of large gold margins of safety, as they did in England before the War, what they really object to is not the waste of gold, but the limitation thus imposed on note issues and other forms of circulating credit, whereas it is the

necessity for this very limitation which is the chief reason for maintaining any metallic basis at all.

Conclusion

We must conclude that, however interesting and even ultimately profitable it may be to try to devise a perfect form of currency for a different race of human beings, the immediate need is for a monetary system that will come the nearest to perfection in actual use among human beings as they are. And, as we have seen, throughout the long history of the processes of exchange, from primitive forms of barter to recent war financing, the human beings who have come nearest to preserving the one most elusive quality of their currency, namely, its stability, are those who have not departed from the gold basis. Whatever the defects of this system, therefore, and whatever modifications must be made in the interests of a greater stability of value than any currency has yet attained, it seems that we human beings — with all our defects upon our heads — must, at least for a long, long time to come, make some use of a gold basis.

CHAPTER VIII

MONEY AND THE RATE OF INTEREST

From the discussion in the previous chapter, it is evident that most of the claims for the Edison commodity money are not well founded. It would not provide a money that is sounder than gold money; it would not provide a money less subject to fluctuation in value; as a rule, it would not enable farmers to obtain larger loans than they can now obtain; it would not divorce agriculture from the banking system; and it would not eliminate speculation in farm products. There remains at least one claim, however, that we have not yet considered: it is said that the new system would provide farmers with loans, free of interest charges. This is a valid claim. Undoubtedly, under that system certain farmers would get the use of some money for nothing. Thus, to the extent of the interest charges they saved, they would have an advantage, at least at the outset, over all other classes of producers, including those farmers whose products were not accepted for storage. That much is clear.

Should Producers of Basic Necessities have Free Loans?

It is not clear, however, why the Government should grant this special privilege to any one group of producers. It would be a Simon-pure piece of class legislation. The justification for it, we are told, is the fact that the farmer provides us with the basic necessities of life: without the products of the soil, we could not live. Here we enter upon dangerous ground. By the same logic, we should grant special privileges to producers of coal and

oil. Is not fuel a basic necessity? By the same logic, we should do something for the special advantage of manufacturers of clothing. We cannot clothe ourselves with bales of cotton and wool; and clothe ourselves we must, according to law. Even printed matter is a basic necessity, if farmers are to know what is going on in the world, if their children are to have school books, if agricultural colleges are to have libraries, if farm bureaus are to make reports. But printers and publishers have troubles of their own: every year many of them fail. No doubt the Government could aid them, at least for a while, by exempting them from postal charges. Further illustrations are needless. Plainly, it is folly, in the midst of the exceedingly complex economic organization of to-day, to try to draw a hard-and-fast line between those activities which are essential and those which are not. We might as well try to decide whether sodium or chlorine is the more important element in table salt: all we can say is that without either there is no salt.

How would farmers themselves get along, in their efforts to feed and clothe the world, without the aid of those who make their machinery and fertilizers, transport their products, and get them finally into the hands of consumers? There is scarcely a duller commonplace in all the dull ranges of economic theory than the remark that farmers are just as dependent on hundreds of other groups of workers as these groups are dependent on farmers. The "basic necessity" argument gets us nowhere. Granting all that can be said about the importance of the farmer's work, granting the utmost that the farmer himself would say, we still have nothing to justify us in singling him out for the special privilege of free loans at the expense of all his coöperating fellow workers in other fields.

How long would Free Loans prove a Benefit?

And now, setting aside considerations of justice, we may raise the question how long free loans would greatly help the farmers? Not very long, for the Edison plan is based on still another economic fallacy. It aims to benefit a group of producers permanently by granting them special privileges. But, as a rule, those who are engaged in a business that is open to free competition cannot profit by special privileges for more than a short time. If all shoe manufacturers, for example, were exempted from taxation, the industry would soon settle down to competition on that basis, and producers of shoes would then be no better off than before. If all farmers had warehouses constructed for them at public expense, and loans provided free of interest charges, competition among farmers and the prices of their products would be adjusted after a while to the new conditions. Then these Federal aids might prove of little advantage.

Are Interest Charges Unjust?

So much for helping the farmer. From the Ford-Edison point of view, however, this commodity money plan has far more to commend it than the mere fact that it helps the farmer, for it is regarded as a step toward the abolition of all interest charges. And interest, it is said, "is a tax that few ancient tyrants would have dared impose, . . . a contrivance whereby all production is taxed by parasites, and whereby money is given a supremacy over men, material, and management which it cannot sustain." [1]

Nearly as old as money itself is the idea that it is unjust to require the payment of interest from those who borrow money. One instance of this alleged injustice will serve as well as any other to present the viewpoint of those who

maintain that governments should not pay interest on loans. "Fifty years ago," it is said, "the City of Cleveland installed a new pump in its water-works, laid water-mains and made other improvements, at a total cost of $400,000. The city borrowed the money on bonds to pay for the work. To-day, the City of Cleveland has paid $1,060,000 in interest on the original debt. It must go on for ten years more paying interest. And it still has the original cost price of $400,000, every dollar of which is unpaid. In 1920 the City discovered that approximately sixty per cent of all the money raised was already obligated for the payment of the interest and principal on bonds, sold in years gone by. Sixty cents out of each dollar, therefore, was being used to pay for improvements, many of which, like the $400,000 water-pump mentioned above, had worn out long before they were paid for." [2]

No doubt it is irksome for the City of Cleveland to continue to pay for its water-works long after they are useless, just as it would be irksome for a farmer to pay interest on money borrowed to buy a horse long after the horse had died. Nobody likes to pay for a dead horse, literally or figuratively. But in neither case could we blame those who provided the money. The only economic order that can possibly work is one in which those who spend the money must incur the risks. The man who bought a Ford motor car with borrowed money and wore out the car would still have to pay the interest and principal of the loan. It would be childish for him to seek to avoid further payments merely because the car was worn out.

What determines the Rate of Interest?

The desire to abolish interest is due in part to the widespread belief that banks themselves arbitrarily fix the rate of interest, with no other object in view than to make as

much money as possible. This belief seems absurd on the face of it, for it fails to explain why the banks do not make the rates still higher in order to make still larger profits. But, as we said in the previous chapter, no theories are too absurd to sound plausible, if we start with the false premise that the forces of supply and demand have nothing to do with the price of gold. Interest is the price we pay for the use of gold or — since gold is freely convertible into money — the price we pay for the use of money. If we refuse to believe that this price is determined in the long run by supply and demand, the way is open for us to jump to the conclusion that interest rates are fixed by "Wall Street," or the "Gold Barons," or the Republican Party, or the Federal Reserve Board, or any one else against whom we happen to have a prejudice.

Mr. Ford has no difficulty in seeing that competition among those who wish to buy his cars is the main factor in determining the price of his cars; but he cannot see that in precisely the same way competition among those who want to borrow money affects the price of money. As a matter of fact, the price is determined by the forces of supply and demand, as defined at the outset of our discussions.[3] Neither a government nor an individual can escape these economic forces, except that a government, through appeals to patriotism, may sell bonds at artificially low rates of interest and appear to save money thereby. Even in this case, interference with economic forces, in so far as it leads to inflation, entails eventual loss. Individuals and governments look to the same sources when they want to borrow money, and in the end they have to pay whatever interest is necessary to obtain the money. The price depends mainly on the relation between the total amount offered and the total demand of responsible borrowers.

When, as in 1919, prices and wages are rising, and there is a general eagerness to buy goods, to hold them for higher prices, to enlarge business operations, and to start new enterprises, there are unusually heavy demands for money at any given rate of interest. Consequently, rates go up. But when, as in 1921, prices and wages are falling, and people are loath to buy goods, and production is curtailed and new enterprises are discouraged, old loans are paid up and the demand for new loans at a given rate falls off. Consequently, rates go down. Thus the price of money is constantly tending toward the highest point at which it will be possible to find trustworthy borrowers for the available supply.

Does More Money mean Lower Rates?

"The available supply!" That is exactly the trouble, according to the inflationist arguments. Says Mr. Ford: "The supply is inadequate. There is more wealth than there is money to move it." Senator Capper insists that "cheaper money means cheaper and more abundant food." [4] J. V. Nash draws a vivid picture of "the golden dam to the stream of prosperity." [5] From a hundred quarters comes the demand for the Government to speed up the printing-presses, in order to crush "the money monopoly," reduce interest rates, and make it easier for everybody to get money.

Inflating the currency, however, though it enables people to get more units of currency, does not enable them to obtain more purchasing power, and it does not reduce interest rates. In all her previous history, Germany never had as much money or as high interest rates as in 1922. In the United States, during the industrial activity immediately following the World War, interest rates went up while the volume of money in-

creased. Then, after the break in prices, as the volume of money contracted, interest rates went down. Again, we must recall the distinction between money and other forms of wealth: [6] money, unlike other forms of wealth, is not easier to obtain simply because the total supply is increased. On the contrary, increasing the supply of money ordinarily increases the demand for money: and interest rates depend not on the total supply, but on the relation between supply and demand.

Along with the mistaken notion that more money means lower rates of interest, we usually find the equally erroneous belief that high interest rates hamper production. The fact is that a rate of interest which truly reflects the scarcity of capital is most likely to keep production at its maximum, year in and year out. To interfere with the ordinary forces of supply and demand for the purpose of reducing interest rates is to interfere with sustained production.[7]

It is said that the total wealth of the United States at the close of 1919 was $187,739,000,000; and that the total money in circulation was only $7,629,429,000. "It is therefore evident," we are told, "that only one thirtieth of the wealth of the country could be liquidated in money at any given time. Is it any wonder that we suffer periodically from the nightmare of panics?" [8] The argument seems to be that if we had thirty times as much money in circulation, so that the total national wealth — all the houses, railroads, pictures, and everything else — could be sold at the same moment, all our financial troubles would be over. That is not far from sheer nonsense. In the first place, there is no occasion for selling the total wealth at any given time. There are always some people who are willing to keep their houses, furniture, books, factories, cars, and clothes, at least for a few days

longer. It may be that only one thirtieth of the population at any given time could ride on the railroads or talk on the telephones; but there is no nightmare of panics on that account. Fortunately, never at one time do all the people insist on riding or talking. This indictment of our limited money supply is groundless, in the second place, because, if we increased the money in circulation thirty-fold, we should not necessarily be any better prepared than before to effect the exchange of our wealth. For, unless other changes had offset the influence of the inflation, the wealth of the country would have increased at least thirty-fold in dollar-values, and we should be in as great need as ever of thirty times as much money. Consequently, business would be no more bountifully supplied with money than before, and interest rates would be no lower.

Should the Government pay Interest?

Nevertheless, whatever the rates of interest may be, it is clear that the Government, by printing money instead of borrowing money, would be relieved of the burden of all interest payments. "Mr. Ford thinks it is stupid, and so do I," says Mr. Edison, speaking of the Muscle Shoals project, "that for the loan of $30,000,000 of their own money, the people of the United States should be compelled to pay $66,000,000 — that is what it amounts to, with interest. People who will not turn a shovelful of dirt nor contribute a pound of material will collect more money from the United States than will the people who supply the material and do the work. That is the terrible thing about interest." [9]

But is there really anything more terrible about paying for the use of money than about paying for the use of anything else? Let us see. Suppose a farmer finds himself in need of a harvesting machine, and without enough

money to buy one. In that case, he can either borrow a machine of Neighbor Brown, or borrow money and buy a machine. The machine is his neighbor's capital goods: the money is a claim upon capital goods. The farmer should not expect to borrow a machine from his neighbor without in some way paying for the use of the machine. Why should he expect to borrow money — which is honored in the markets as an effective claim upon the same machine — without paying for the use of the money?

Now, let us suppose that the farmer uses the machine so successfully that, after selling his crops and paying all his bills, he has a thousand dollars left over. With that money he can buy a farm and he can let Neighbor Brown have the use of it. Neighbor Brown, naturally, would expect to pay rent. Instead of buying the farm, however, he could lend the thousand dollars to his neighbor in order that his neighbor might buy the farm. In that case, Neighbor Brown should expect to pay rent for the money. All this seems clear. When the transactions are as simple as these, it is plain that there is just as great propriety in charging for the use of money as in charging for the use of the things that money will buy. It is equally evident that if men could not receive interest on their money, they would not lend it at all; they would convert it into property which *would* yield an income. Then, with the Edison plan in operation, nobody but farmers could obtain loans.

We may assume, however, that the farmer does not want to buy land and Neighbor Brown does not want to borrow money. In that case, the farmer deposits his thousand dollars in a savings bank and the bank pays him interest for the use of his money. But the bank can pay interest to him only if it makes profitable use of his money. Now the bank finds that the City of Toledo needs

a high-school building, and has decided to borrow enough money to construct it. In order to obtain the money, the city has issued bonds, each of which is a promise to pay one thousand dollars at a specified date and interest in the meantime at a specified rate. The bank buys one of these bonds. Thus the farmer has had a part in providing Toledo with a school building; and he has just as much right to expect interest for the use of his money as though he had loaned the money directly or indirectly to Neighbor Brown. The same principle applies to the financing of the Federal Government by means of the sale of bonds.

To some people, however, it seems stupid for the Government to pay interest on loans. A popular alternative plan is outlined as follows: "If the Government issued money on its own account under a well-thought-out, practical, automatic law, the Government would not have to borrow money or sell certificates of indebtedness (to buy them back at a premium, for that is what interest amounts to) or go to great expense to accommodate its finances through the agency of the very banks it has licensed to operate. . . . It is a fact, that if the Government issued all money, contracting or expanding the currency in accordance with the nation's economic needs, it would eliminate that choice bit of investment paper — the Government bond. . . . No Government bonds — no public debt — and there would be no interest."[10] This is essentially the method of Soviet Russia. When public expenses exceed public revenues, there are two ways of paying the bills: by borrowing money and by printing money. When a government borrows money, whether it borrows the savings which the people have entrusted to the banks or borrows directly from the people through the sale of bonds, it must pay, as any other borrower must pay, whatever interest is necessary to obtain the money.

And, in so far as it borrows savings, it does not inflate the currency. But when a government pays its deficits by printing money, it confiscates savings instead of borrowing them; and it thereby pursues the very policy of inflation that has brought Russia to financial and industrial chaos. As the Commission on Public Finance of the Brussels Conference said — but said in vain — to the League of Nations, " The country which accepts the policy of budget deficits is treading the slippery path which leads to general ruin." For a nation to spend money which is not the savings of its people is as unsound financially as for an individual to sign checks without having first deposited money in the bank.

Is a Money Economy Possible without Interest Charges?

All we have said so far is merely an introduction to the subject of interest. Assuming that we are right in our contention that production of goods and human welfare generally are best advanced in an economic order based on private property, individual initiative, and a medium of exchange, society must not only provide sufficient inducements for the saving of money, but also some means of distributing savings among the innumerable producers who would like to make use of these savings. That the institution of interest is an indispensable means will appear in our discussion of Money in Production.

CHAPTER IX

MONEY AND INTERNATIONAL TRADE

ALTHOUGH a full discussion of the problems of foreign exchange is beyond the scope of this volume, we should at least touch upon some of those monetary phases of international trade that are of most immediate practical importance and most frequently misunderstood. First among them is the use of gold.

When there is a balance due from one country to another that cannot readily be settled by the shipment of any other commodity or in any other way, the balance is paid by the shipment of gold. Whether the gold is in the form of coins or bullion matters little, for in foreign trade it is only weight and fineness of gold that counts. Germany exchanges her gold for goods without any reference to the value of the paper mark. A pound of gold that comes from China, which is not on a gold basis, or from Austria, which has nothing but inconvertible paper money, is worth precisely as much in New York as a pound of gold that comes from South Africa. The exchange of goods for gold is as purely a barter transaction as though the balance were paid in so many pounds of copper or cotton, except for the supremely important fact that gold is universally accepted in exchange for all other commodities. The difference between gold and other bartered goods is one of degree: gold is, of all commodities, the most readily accepted.

Gold as an Equalizer of Money Values

Although commerce among the nations is thus carried on without an international currency, it cannot be carried

on extensively without an internationally recognized measure of value. An entirely satisfactory measure has not yet been used: even gold, as we have shown in the fourth chapter, is not a true standard. The adoption of international coins and bank notes on a gold basis, therefore, would not solve the problem. As long as the currency units in various countries are weights of gold of given fineness, those countries use in foreign trade exactly the same measure of value that they would use if there were an international gold currency.

Thus, the gold basis of money promotes international trade by establishing fixed value-relationships among all the convertible currency units of the world. However the value of gold may fluctuate, the currencies of gold-basis countries at least have a nearly fixed relationship to each other. Before the War, for example, the ruble was redeemable for 11.94 grains of gold and the dollar for 25.8 grains. Consequently, an Atlanta merchant could sell his cotton for future delivery in Petrograd at a fixed price in rubles and know almost exactly how many dollars the rubles would bring several months later. Similarly, the pound was never far from 4.866 times as valuable as the dollar, because the pound contained 4.866 times as much gold as the dollar. This relationship was maintained as long as both the pound and the dollar were freely convertible into gold, and were therefore freely interchangeable at the established ratio. For the same reason, it was easy to tell almost exactly how many dollars a thousand marks, or kronen, or guilders, or yen were worth. Thus the price quotations of all gold-basis countries were linked together. Before the War, therefore, fluctuations in exchange rates did not paralyze international trade.

When the currencies of any two countries are related

in this way, business between them is subject to no risk of exchange fluctuations beyond the cost of occasional shipments of gold. Whether it pays to ship gold is determined by market conditions. If the level of prices is higher in one country than in another, gold is necessarily cheaper in the country of higher prices, and it is therefore shipped in preference to other commodities. In the United States, for example, when the volume of money increases faster than the volume of trade, the purchasing power of the dollar declines. If it sinks below parity with the yen by a sufficient amount to cover cost of shipment and a profit on the transaction, gold is shipped to Japan, or to London for credit to a Japanese account. This is not because there is anything really "adverse" about the balance of trade, but simply because gold buys more in Japan. Gold seeks the market where its value is highest, measured, as all value must be, by purchasing power. In the main, it is subject to the economic laws that govern all other commodities. Before the War, therefore, if prices in Germany rose above those in England, it became more profitable to ship goods to Germany. Then prices in Germany tended to fall, prices in England tended to rise, and the flow of gold to England stopped or began to move in the other direction. Thus variations from the established exchange rate were never much more than the cost of shipping gold. For the same reason the exchange rate of the dollar and the pound usually varied only between 4.885 and 4.845 — the gold export and import points. Thus the movement of gold from one country to another tends to equalize the value of gold in the two, within the limits of the cost of shipment, by increasing the volume in the importing country and reducing it in the other.

Exchange Rates are not fixed by Fiat of Bankers or Governments

For this reason, it is impossible for any group of bankers to manipulate exchange rates, except within very narrow limits. Neither is it possible for any nation to fix exchange rates by Government fiat, unless it is prepared to raise huge sums by taxation and spend them for this purpose. Reformers fail to take into account these elementary principles when they insist that the United States Government, at no expense to itself, but merely by resolution, should fix official exchange rates for all currencies, simultaneously post these rates at every capital, and thus do away automatically with foreign exchange speculators.[1] Almost as feasible would be a project for automatically abolishing variations in human nature.

For the same reason it is folly to try to find in the rising exchange value of the currency in any one country an explanation for the increased cost of living in any other country. As long as the exchange rate between France and the United States rightly reflects the purchasing power of their currencies, a rise in the price of United States currency cannot cause a rise in the price-level of France.[2]

Nothing in the whole realm of finance seems clearer than that Germany has debased her own currency: she alone is responsible for the depreciation of the paper mark. Yet Mr. Ford's agents blame "Wall Street." They declare that international bankers in this country are responsible; that they "succeeded in scaling down marks" by means of "legalized stealing of the worst kind"; that they are "literally gold-bricking the rest of the world."[3] All this condemnation in spite of the fact that "international bankers" are powerless to prevent the fall of the

mark: they cannot possibly keep pace with the printing-presses, since there is not enough gold in the world to maintain, at pre-war gold exchange value, the present volumes of paper money. Such indiscriminate denunciation by those who are ignorant of the first principles of finance is one of the real obstacles to economic progress.

Fluctuation in Foreign Exchange

After the War, when most currencies were no longer convertible, an Atlanta merchant who wished to trade with Petrograd, or Vienna, or Hamburg, or Paris, often had to meet, in addition to all the other risks of international trade, the risk of losing all his profits or more because of the falling values of inconvertible currencies. It was not possible to reach a safe basis for foreign trade by converting paper prices into gold prices. As soon as the greater part of Europe abandoned the gold basis, the confusion was such that all price and wage comparisons became misleading. In February, 1921, for example, the wages of carpenters, in gold exchange value, were about as follows: in the United States, $9 per day; in Great Britain, $3.26; in Belgium, $1.91; in China, $0.30; in Germany, $0.24. That is to say, the daily wage of a carpenter in Germany was worth about twenty-four cents in gold. Many startling conclusions concerning foreign trade were drawn from the wide discrepancy between a daily wage of nine dollars in gold in the United States and twenty-four cents in Germany; but the German carpenter was spending his twenty-four cents in a country where local prices were no longer gold prices. Consequently, it was misleading to use the old methods of comparing the wages and prices of Germany with those of any gold-basis country.

It is not the lack of an international currency to-day

that hinders world trade, but the lack of a common measure of value — the lack of any currency units at all within many commercially important countries that are maintained in approximately fixed relation to the value of the gold dollar. The gold dollar, or any other piece of gold of known weight and fineness, serves foreign trade — with the aid of a little arithmetic — just as well as it serves domestic trade. It is not the fact that paper money is inconvertible that discourages foreign trade. Paper money, good or bad, is seldom used in foreign trade. It is the fact that, because it is inconvertible, it fluctuates in value so rapidly and so widely that a merchant who sells goods at paper-money prices has no means of knowing, even approximately, what his pay will be worth on the day he receives it. If the purchasing power of inconvertible paper money could have been guaranteed during the World War, it would have been more eagerly sought than gold, because gold itself was unstable in value. Following the World War, the fluctuating values of inconvertible currencies directly caused the breakdown of international trade relations; and the restoration of the gold basis in the chief commercial nations became the dominant, immediate economic problem of the world.

When a nation is on an inconvertible paper basis, there is no automatic curb upon the fluctuations of foreign exchange, for there is no automatic curb on the issue of money. On the contrary, an abridgment of the freedom of the market for gold at once increases the difficulty: the greater the doubt concerning the freedom of the market, the greater is the amount of gold required to maintain convertibility and take care of a given volume of internal trade.

Furthermore, the smaller the volume of other commodities available for export, the greater is the need of gold

for export. But soon there is no gold to export. For, when economic conditions are unsound, as they were in most of those countries which continued, long after the War, to consume more goods than they produced, the inward flow of gold is obstructed. Excess of consumption over production can continue only as long as a country exports gold, or pays the balance with services, or with the income or principal of foreign investments, or succeeds in getting the people of other countries to speculate in foreign exchange. For a time, following the War, Germany was successful in selling marks abroad. But this is only a temporary expedient. On account of the increasingly adverse exchange rates which result, the people of other countries presently stop speculating and the excess consumption has to stop.

Such emergencies cannot be met successfully by suspension or evasion of the principle of convertibility. For the value of money, once it has depreciated, tends to fall still further, because — as we have seen in previous chapters — more paper money is issued under the stimulus of rising prices, the consequent need of the Government for larger funds, and the general complaint that there is "not enough money to do business with." When the income of an individual or a nation is less than the outlay, increased expenses can be met only by increased promises to pay. The easiest way, and at times apparently the only way, for a nation to make good these promises is by printing more paper money, or by obtaining bank credits in exchange for promises to pay in the form of certificates of indebtedness. The result is further fluctuations in foreign exchange; for gold does not flow out and thus tend to restore the balance of prices.

Foreign Trade requires only the Stabilization of Money Values in Home Markets

It follows that the paramount economic problem of European countries is the stabilization on a gold basis of the purchasing power of monetary units in home markets.[4] This is a first step toward balanced foreign trade. It is of far greater immediate importance than a return to pre-war values. For purposes of international trade, there is no need of bringing back the depreciated monetary units of Europe to their former gold parities. This fact is not generally understood. From the widespread ridicule of the franc and the mark and the krone and the ruble, many people have gained the impression that these units can never again satisfy the purposes of exchange. On the contrary, if the purchasing power over commodities in the home markets of any one of these depreciated units could be maintained at its present level, it would serve the purposes of foreign trade exactly as well as it would on any other level.

In most European countries, new rates of exchange will have to be far different from the old. This, however, need not hamper foreign trade. The one thing needful, as far as rates of exchange are concerned, is that they shall stay where they are long enough to warrant public confidence in their stability. To attain that *sine qua non* of foreign trade, no international agreement is necessary. A fairly constant and entirely satisfactory rate between any two countries becomes established as soon as each country stabilizes the purchasing power of its own money, whatever that may be, in its own markets.

It is not even necessary for either country to have any gold to ship to the other. So long as there is an exact balance between exports and imports, there is no monetary

limit to the volume of foreign trade. It is only when the imports of one of the two countries exceed its exports, and the balance cannot be settled in any other way, that a shipment of gold becomes necessary. Even before the War, when nearly all the chief trading nations were on a gold basis, only a small fraction of the foreign trade of the world required payments in gold.

Figure 7 is a map of Europe showing the various de-

FIGURE 7. DEPRECIATION OF EUROPEAN CURRENCIES, SEPTEMBER, 1922

grees of depreciation of European currencies in September, 1922.[5] Only a motion picture, however, could show the main trouble; for it is not the fact that there are, at any one time, as many degrees of depreciation as there

are European currencies that hinders business, but the fact that nobody knows what the degrees of depreciation will be at any subsequent time.

When prices reached their height in the United States following the War, it was frequently said that the high level of prices at home tended to curb trade with other countries. This is a mistake. For purposes of international trade, there is no such thing as a normal price-level. Whatever the purchasing-power parity of the currencies of any two countries may be, it is entirely satisfactory for purposes of foreign trade as soon as the exchanges have become adjusted to that parity. It is not high or low price-levels, but rapidly fluctuating price-levels, that hinder foreign trade.

Fortunately so, for there is not enough productive power in the world to bring back the present volume of currencies of Europe to their pre-war purchasing power. Nor is there any hope of attaining enough. Production in the United States during the past generation seems to have increased at the rate of approximately four per cent per annum. The rate for the whole world certainly has not been in excess of four per cent. For the United States to overcome, by means of increased production at that rate, a degree of inflation represented by an index number of 200, would take more than one generation. Germany would require several generations. Even if it were possible to prevent further inflation of the currency during such a long period, there would be a continuous tendency toward a fall in the price-level and consequent prolonged business depression. This is on the assumption that the volume of trade would increase at least as rapidly as the volume of production. But, under such conditions, it is not likely that production would increase at the rate of four per cent per annum. Consequently, it is not likely

that Germany, even in a century, could restore the present volume of marks to pre-war values by means of increased production.

Nor is there enough gold in existence to restore the present volume of marks to the pre-war parity with the dollar. To bring Russian rubles to that parity would require more than three hundred thousand times the world's stock of gold. It is doubtful whether the discovery of a cheap method of making gold out of baser metals or extracting it from the sea, or the discovery of far more productive mines than the world has yet known would ever yield enough gold to bring back the present European currencies to their old parity.

Furthermore, for most European countries, deflation would bring new disasters. To increase the value of the unit in which the debts of these countries have been contracted would render most of them insolvent, and would necessitate such sharp reduction of wages that the result would be social unrest and decreased production, if not revolution. At the very best, attempts to restore the currencies of Europe to their former parities would interfere with international trade because such attempts would interfere with the stability of the exchanges. The practical question for most European countries is not how soon it will be possible to restore the former values of their units, but how soon it will be possible to stabilize them at any value at all. The sooner the whole world accepts this fact and acts accordingly, the better it will be for the world.

The Favorable Balance of Trade Fallacy

This understanding of the part that gold plays in the commerce between nations should guard us against the fallacies that are frequently offered under the name of a

"favorable balance of trade." That is a mouth-filling and prosperous-looking phrase. For centuries it has attracted many men of many nations. Indeed, it was the central interest of an early school of political economy, the Mercantilists, as they were called. Even in our day, some men are still talking about a favorable balance of trade as though it were a permanent source of national wealth. They seem to think that, since a merchant's prosperity is measured by the amount of money he receives in excess of the amount he spends, the prosperity of a nation can be measured by the same method. Consequently, they argue, the way for a nation to get rich is to sell more than it buys and take its pay for the balance in gold. The *Bank Catechism*, issued (in 1920) by the Guaranty Trust Company of New York, makes this error when it says: "The more we can sell to foreign countries at a profit, the greater becomes the wealth of this country, because we are getting 'the other man's money'; whereas, when products are sold for consumption in this country, it is as if we took money out of one pocket and put it in another." As a matter of fact, it does not necessarily follow that "getting the other man's money" increases the wealth of this country. In the long run, it is only by getting the other man's goods that we can profit by foreign trade; whereas, under what is called a favorable balance of trade, we send abroad more tangible goods than we receive from abroad. This is a case in which stating the situation in terms of goods rather than in terms of gold really does set up a defense against loose reasoning.

Apart from the requirements of the arts, all the gold that any nation needs at home is enough to insure convertibility. After a nation has accumulated sufficient gold for these purposes, the only way it can gain the

maximum material benefit from sending goods abroad is by taking, ultimately, the full value of foreign goods or services in exchange. The gold itself is useless as food or clothing. Following the World War, for example, the United States gained nothing by importing vast stores of gold. Most of the gold that was imported after 1920 was not used as a basis for currency or credit expansion; and, if so used, it would merely have caused a more injurious inflation. It was of no immediate use in the United States; but it was immediately needed abroad to restore the gold basis of European currencies.

As long as we keep all this clearly in mind, we are not likely to think that a country can permanently prosper by preventing other countries from sending in their goods. In England a *favorable* balance of trade has long been a sign of trouble, because England, on account of her investments abroad and her services to the trade of the world, has regularly imported more goods than she has exported. The gist of the matter is that any nation, in so far as it exports goods in excess of its imports, usually increases its store of gold; but it cannot use the excess gold to increase the consumable goods at home except by making the balance of trade *un*favorable. In short, a favorable balance of trade is advantageous, as a rule, merely because it makes possible a subsequent *un*favorable balance of trade.

To this statement, one exception will be noted when we come to a discussion of Money in Production. There is an important difference between the use of gold in internal trade and the use of gold in external trade. When gold flows from one country to another, it becomes an addition to the base of the inverted pyramid of money in the importing country, and may thus increase the currency and bank deposits of that country many times the value of the

additional gold. Exchanges of gold within a country, however, do not change the monetary stocks of gold of that country. It follows that, when the production of a country is below the maximum, importation of gold may increase the wealth of that country, if it is so employed that it increases the purchasing power used in consumption of goods at home; for it may thus stimulate that country to produce more wealth for itself.[6] This particular benefit can result from the importation of gold only when the business of the country is in special need of a revival; and even at such times, more gold is not the chief need, since in periods of depression banks have large surplus reserves.

When production is at a maximum, an increase of current purchasing power cannot bring about the production of more goods; so it lifts the price-level, which may prove far from beneficial. Nevertheless, it is because imports of gold thus tend toward inflation, and because business enjoys the stimulus (while it lasts) of rising prices and larger dollar-profits, that many business men cling to the "favorable balance of trade" fallacy. As a matter of fact, the long continued favorable balance of trade of the United States following the War, and the consequent accumulation of vast gold reserves, was a constant menace to business.

In all countries an adverse balance of trade causes immediate concern; whereas an adverse balance of consumption over production, which is far more serious, attracts little attention. During the War, all the fighting nations used up more than they produced. They could do this only by destroying most of their surplus and much of their capital. After the War, many measures were passed in various countries which, in ultimate effect, made the balance of consumption over production

still more unfavorable, since they tended to increase the wages and decrease the products of labor. As Professor Nicholson pointed out, in his lectures at Edinburgh following the War, it was precisely as though the nation, in the darkest hours of submarine warfare, had encouraged the people to eat more and to work less.

The "Surplus Production" Fallacy

There are various other approaches to the "favorable balance of trade" fallacy. We may fall into the same hole even though we start on our economic journey with our attention fixed on goods rather than on money. The "surplus production of goods" route is a favorite thoroughfare to unsound conclusions. We travel that way whenever we proceed with the argument that a nation, in order to be prosperous, must have an outlet for its annual net surplus production.

This "surplus production" fallacy is due partly to the failure to distinguish sharply between the interests of the individual and the interests of the group. Although rarely do we find in any country more of any economic goods than the people of that country *want*, every country does have a surplus of some economic good, in the sense that the people as a whole would rather have what they can obtain from abroad in exchange for this surplus — wheat in the United States, for example — than to consume the surplus. Foreign trade on this basis benefits the group.

There is another kind of "surplus," the exporting of which benefits only the individual. A manufacturer of sewing machines, for example, may reap larger profits by sending twenty per cent of his product to Europe than by selling the whole output in the home market at lower prices. Prosperity — his prosperity — may, indeed, re-

quire a foreign outlet for his "surplus"; but by "surplus" he sometimes means merely that he has more machines than he can sell at a certain price. He does not mean that he has more machines than the home people would like to buy at lower prices, and prices that would still yield him a profit. If the total product were sold at home, what the manufacturer would lose the people would gain. Indeed, in the long run, both might gain. The prosperity of the country as a whole does not necessitate selling this kind of a surplus abroad.

In connection with the production of sewing machines for export, our manufacturer presumably distributes money at home as wages and as dividends; but the machines go abroad. In so far as he thus increases purchasing power that is used in home markets without adding any goods to home markets, he does his part toward lifting the price-level. The same effect on prices at home might result from destroying twenty per cent of his product and printing and placing in circulation as much money as would have gone into circulation as a result of selling twenty per cent of his product abroad. He cannot benefit the people at home by depriving them of twenty per cent of the goods they produce, and using "the other fellow's money" merely to lift the level of prices at home.

Obviously, each nation gains by exchanging *certain* commodities for commodities which other nations produce at a lower real cost: in the long run foreign trade can benefit a nation in no other way. It is true that imports are paid for to some extent with the services of transportation, with foreign securities, and with gold. There are limits, however, to each of these means of payment. The United States, for example, could not maintain a favorable balance of trade indefinitely without acquiring

gold, or creditors, or foreign securities to an extent that would be harmful both to the United States and to her customers. Eventually, as we have said before, commodities must be paid for chiefly with commodities. This balanced exchange, however, is not the kind of trade that many people in the United States have in mind when they insist on the necessity of an outlet for our "surplus." They maintain that this country normally has an output about fifteen or twenty per cent in excess of all it consumes of its own products and of those of other countries combined, and that its prosperity depends on permanently sending this surplus abroad at a money profit. If this argument is valid, it follows that the only way that all the nations of the earth can be prosperous at the same time is by disposing of the world's surplus over an air line to Mars, or to some other planet that must be forced to bear the burden of this world's superabundance. This reasoning is not unlike the contention that the United States can be safe only so long as it maintains the largest navy in the world, which amounts to declaring that only one nation in the world at any one time can possibly be safe.

Periodically, it is true, there are unusually large, unconsumed stocks of goods in the United States that cause distress to business. But before we conclude that the only possible outlet for all such stocks is foreign markets, we shall do well to consider whether, under certain circumstances, the production of goods is not financed in such a way as to fail to place in the hands of consumers enough money to buy the goods at current prices. That question we shall meet again in connection with our discussion of Money in Consumption.

CHAPTER X

MONEY AND THE PRICE-LEVEL

As price is the central theme of economics and one of the most persistent interests in life, it is not surprising that there have been many controversies over the question what causes fluctuations in price. Particularly heated have been the arguments concerning the relation of changes in the quantity of money to changes in the price-level. At one extreme are those who, with Professor Laughlin, insist that "price movements are in every case the cause of fluctuations in the volume of money in circulation." At the other extreme are those who, with Professor Fisher, denounce "the fanatical refusal of some economists to admit that the price-level is in ultimate analysis effect and not cause." This clash of opinion can be examined to best advantage by means of an equation of exchange. The discussion, however, will not be easy reading. There appears to be no way of making it easy without yielding to the temptation of making it seem a far simpler matter than it really is. Nevertheless, even those business men who are impatient with the abstractions of economic theory may find a further study of this subject not without its practical advantages; for changing price-levels are of vital concern to business. Indeed, seldom do business men get together without raising the question whether prices are likely to go up or down.

In order to follow this discussion without becoming confused, it is necessary to keep in mind the distinction between the general price-level and the relation of individual prices to each other on a given price-level. To

attempt to deal with these two subjects at the same time is confusing. Innumerable causes have a part in determining *individual* prices — the price of a quart of milk, for example, or the price of a ton of coal — and never are the same causes operating to the same extent in any two individual prices. But in all cases and at all times, *one* of the causes which inevitably affects all individual prices is the price-level: no matter what other factors enter into the present prices of milk and coal, we may be sure that one of the factors is a general price-level much higher than it used to be. Coincident with any change in the price-level, there may or may not be a change in the *relative* prices of milk and coal: but in this chapter we have nothing to do with the relation of individual prices to each other. It is only with factors that determine the general price-level that we are here concerned. In the following chapter we shall have something to say about the function of individual prices.

Measurement of the Price-Level

The price-level means the prices of things in general: it includes such diverse items as the price of a toy balloon and the price of an ocean liner. Nevertheless, the conception of a general price-level can be made definite by means of index numbers. Professor Fisher, in *The Making of Index Numbers*,[1] provides us with methods of measuring such elusive things as fluctuations in real wages, in exchange rates, in volume of trade, in the cost of living, as well as in the purchasing power of the dollar. He tests not only all the formulæ for index numbers that have been used, but as well all that reasonably could be used; and he tests them by means of actual calculations, extensive and painstaking, based on actual statistical records. Thus he proves that several of the methods of

constructing index numbers now in common use are grossly inaccurate; he makes clear why some formulæ are precise and others far from it; he points out how to save time in the work of calculation; and he shows how to test the results.

But, after all, is it possible to devise a means of measurement that is sufficiently precise to be used as a basis for determining matters of such concern to all human beings as contracts, currency measures, price adjustments, and wage schedules? The doubts on this question that have hitherto stood in the way of the universal use of index numbers must vanish before Professor Fisher's demonstrations. He shows that an index number may be so precise an instrument that the error "probably seldom reaches one part in 800, or a hand's breadth on the top of Washington Monument, or less than three ounces on a man's weight, or a cent added to an $8 expense." He shows, further, that all the forms of index numbers that satisfy his few, simple tests give results so nearly alike that it matters little or nothing, for most practical purposes, which form is employed. Any one of these forms is comparable, in point of accuracy, with many of the instruments that are universally and unquestioningly employed in other scientific fields.

All sciences are characterized by a close approach to exact measurement. Without units of measurement, generally understood and accepted, science could have made little progress. In order to determine the pressure of steam, we do not take a popular vote: we consult a gauge. Concerning a patient's temperature, we do not ask for anybody's opinion: we read a thermometer. In economics, however, as in education, though the need for quantitative measurement is as great as in mechanics or in medicine, we have been guided in the past largely by

opinions and guesses. In the future, we must substitute measurement for guesswork. Fortunately, we are now making rapid progress toward this end by employing those formulæ that are demonstrably the most accurate for calculating the index numbers of general prices.

The Equation of Exchange

Keeping in mind the distinction between individual prices and the price-level, we may now consider what is meant by the equation of exchange. It is merely the balance of all the money spent for goods and the dollar-values of the goods. Under the term "goods," we here include all wealth, property, and services; all goods, both new and second-hand, both tangible and intangible. In the equation of exchange, therefore, we use the term "goods" to cover all things the transfer of which involves the actual transfer of money.[2] In other words, the equation of exchange is a summing up of all the actual transfers of goods for money in a given community that are completed within a given period of time. If we express this equation by saying that $MV=\Sigma pq$, most readers exclaim at once that it is too complicated to be of any use. If, on the other hand, we express the equation by saying that, in any one time, the sum of money paid for goods is equal to the sum of money received for goods, most readers are just as promptly inclined to reject the equation as too simple to be of any use. In both cases, they speak too hastily; for in algebraic symbols it is the same equation as in words of one syllable, and in either form it may be used in such a way as to clarify the part that money plays in the world's work.

The complete equation of exchange is, then, simply the sum of all individual exchanges of goods for money, presented on one side as a sum of payments made and on the

other side as a sum of goods transferred. The money, however, is used over and over again: the farmer who receives a dollar for a sack of corn may use the dollar to buy a hoe; the hardware dealer may then spend the same dollar for twine; and so on. Consequently, in any given year, the number of dollars spent is many times the number in circulation. The money side of the equation is, therefore, the number of dollars in circulation multiplied by the number of times they are used. Or, since the number of times a dollar is spent within a given period of time is called its velocity of circulation, we may say that the money side of the question is always the quantity of money times its velocity. Thus, if the money in circulation in a given country is one billion dollars, and each dollar is used to exchange goods twenty times in a given year, the money side of the equation is twenty billion dollars.

The goods side of the equation must also be twenty billion dollars, since it is nothing but the dollar-values of the goods that are exchanged by means of money. It is the number of cars sold times the price per car, added to the number of bales of cotton sold times the price per bale, added to all the other quantities of goods sold times their respective prices. So far, we have offered nothing more debatable than the statement that $4 \times 6 = (2 \times 5) + (7 \times 2)$.

The equation of exchange is just as simple, though less familiar, when we state it in algebraic terms. If, for a given year in a given community, we call the quantity of money M (here, as throughout this volume, using money to include both currency and bank deposits subject to check), and if we call the velocity of money spent for goods V, the money side of the equation becomes MV. If we now call the price of a given article p, and the num-

ber of those articles sold for money q, the goods side of the equation becomes p multiplied by q, plus the products of the q for every other article multiplied by its p. If we listed the prices and the quantities of all the goods sold for money in a given year — 52,385,020 packages of gum at 5 cents, 270 houses at $17,250, 3,480 cords of wood at $13.20, and so on — our list would outrun the pages of the biggest book. But we can sum up the entire list thus: Σpq. Here the algebraic symbol "Σ" indicates summation. By Σpq we mean the sum of all the prices multiplied by all the quantities of all the goods exchanged for money during the entire year. The equation of exchange then becomes $MV = \Sigma pq$.

In discussing this equation of exchange, Professor Fisher distinguishes between bank deposits subject to check (M') and currency (M); also between the velocity of deposits (V') and the velocity of currency (V). The equation of exchange then becomes $MV + M'V' = \Sigma pq$. For certain purposes, these distinctions are important, since, when the price-level is changing rapidly, the quantity of currency (M) by no means varies directly with the quantity of deposits subject to check (M'); and the velocity of currency (V) by no means varies directly with the velocity of deposits (V').[3]

So many people have tried to find in the equation of exchange something false or abstruse that we should perhaps say again that it is merely a statement of fact. In itself, the equation of exchange may seem of no importance — a mere truism. It is, however, of the utmost importance that we should draw no conclusions from it which do not follow logically; and it is equally important that we should take into account at all times the conclusions which do logically follow regarding the relation to each other of the four terms of the equation.

The Quantity of Money in Relation to the Price-Level

What are the conclusions that are usually drawn from this equation? It is said to follow in general that, if there is a change in any one of the four terms, there must be an exactly offsetting change in one or more of the other terms. Consequently, it is said, *all other factors in the equation remaining the same:*

(1) The price-level varies directly as the quantity of money.
(2) The price-level varies directly as the velocity of money.
(3) The price-level varies inversely as the volume of goods transferred by money.

The price-level, therefore, is said to vary directly with the quantity of money in circulation, provided the velocity of circulation of that money and the volume of trade for which it is employed are not changed. This conclusion was well expressed by Simon Newcomb, as follows: "When the volume of the currency fluctuates, *other conditions being equal*, the purchasing power of each unit of money varies inversely as the whole number of units, so that the total absolute value of the whole volume of currency remains unaltered by changes in that volume." [4] All these conclusions are sound. They hold absolutely: there is no need of making the qualifications that are often made. They hold true both for short and for long periods of time, and for abnormal periods, however we may define "abnormal," and for transitional periods, as well as for all other periods.

Before we conclude, however, that changes in the price-level are always caused by changes in the quantity of money, we should note that logically we can draw from

the equation of exchange another set of conclusions. *Other factors in the equation remaining the same:*

(1) The quantity of money varies directly as the price-level.
(2) The quantity of money varies inversely as the velocity.
(3) The quantity of money varies directly as the volume of goods transferred by money.

Evidently, the equation of exchange tells us nothing whatever concerning the causal connection between changes in the price-level and changes in the volume of money. The equation remains true whether a rise in prices is due to an increased quantity of money, or an increased quantity of money is due to a rise in prices.

The Quantity Theory of Money

Those who believe that an increased quantity of money, without a change in the supply of commodities, must result in an exactly proportional rise in the price-level, are rigid "quantity theorists." A recent exposition of their views by one of the most distinguished of monetary authorities may serve as well as any other to show what is usually meant by the quantity theory. In *Money and Foreign Exchange after 1914* (p. 53) Gustav Cassel says: "A diminution in the supply of commodities should properly call for a corresponding reduction in the community's supply of currency. If this is done, then the price-level must remain unaltered. If, on the other hand, it is not done, but the community's supply of currency remains unaltered, in spite of a scarcity of commodities having arisen, it is obvious that a general rise in prices must follow. This rise in prices must be proportional to the plentifulness of the supply of currency — i.e., it must be determined by the relation between the

actual quantity of currency and that which would have conformed to the new reduced supply of commodities. Let us imagine that it would be possible to express the supply of commodities statistically by an index number, and let us further imagine that this index number has sunk from 100 to 80 — i.e., that the community's supply of commodities has been reduced by 20 per cent — then, according to this reasoning, the supply of currency would also have gone down from 100 to 80. If it has not done so, but has remained at 100, then it is too plentiful in the proportion 100:80, and the consequence must be a rise in prices in the same proportion — i.e., the general price-level must be raised from 100 to 125. . . . If we suppose that the community's supply of currency was increased to double the normal amount, while the supply of commodities went down from 100 to 80, then from the first cause a rise in prices from 100 to 200 must result, and from the second cause a rise in prices from 100 to 125. The total rise in prices must, then, have been from 100 to 250." This statement of the quantity theory, we cannot accept, because it holds true only if "all other factors remain the same."

The Assumption that "All Other Factors remain the Same"

In our exposition, we have placed in italics the assumption that all other factors remain the same; for it is to this assumption that we should direct our attention. Failure to take it duly into account has been responsible for most of the controversy, some of it not far from acrimonious, that has raged around this subject.

The truth is that other factors never do remain exactly the same. Consequently, when we say that the price-level varies directly with the quantity of money in circulation, *all other factors remaining the same*, we confine

ourselves to hypothetical conditions. As Professor Fisher himself says, "The proposition that prices vary with money holds true only in comparing two imaginary periods." In the actual world of business, these "other factors" are constantly changing. The conclusions which are logically drawn from the equation of exchange when the assumption in question is made never hold true of actual business conditions, for concerning such conditions the assumption is unwarranted. Consequently:

(1) The price-level never varies directly as the quantity of money.
(2) The price-level never varies directly as the velocity of money.
(3) The price-level never varies inversely as the volume of goods transferred by money.

This does not warrant us in condemning the equation of exchange as useless, for in economics, as in engineering, there is no way of discussing the operation of any force or law except under certain assumed conditions.[5] The trouble is that when we assume that other things remain equal, we sometimes forget, after a while, that we have made an assumption, and we are then in danger of drawing conclusions as though our assumption were an established fact. It is partly because business men have observed errors of this kind that many of them have rejected the equation of exchange. Rather than reject it, they would do well to learn more about those other changing factors. Let us now consider the most important of them.

Goods are transferred without Money and Money without Goods

The equation of exchange does not take due account of all the influences that affect the actual price-level

during any given period of time, because it takes no account of the volume of goods that are transferred without the transfer of money and the volume of money that is paid for goods when no goods change hands. Such transactions take place constantly and to an extent that cannot possibly be predicted in advance. Oswald St. Clair appears to fall into the common error of overlooking this factor when he says: "Where does the money income come from? From the sale of goods and services. The one stream exchanges for the other and is necessarily equal to the other. The magnitude of the one is measured against the magnitude of the other and thereby is determined what we call the general level of prices." [6] This is not an accurate description of the trade of any given month or year; consequently, it cannot fully explain the general level of prices in any given month or year. Within any given period of time, a volume of goods is purchased without the expenditure of money: the debts are carried on open book accounts. Money may or may not be used at a later period on account of these transfers of goods; but, during the period in question, these transactions on the goods side of the equation of exchange have no counterpart on the money side. On the other hand, in any period of time, there are transfers of money in payment for goods which have changed hands previous to the period in question. So there are always transactions on the money side of the equation that have no counterpart on the goods side.

Suppose we allow M'' to stand for the money that is paid for goods in a given year without the transfer of goods, and T'' to stand for the goods that are transferred in that year without the payment of money. Now, the significant facts are that neither M'' nor T'' are exactly the same for any two periods of time, nor do they main-

tain fixed relations to M and T, or to each other. That is to say, M'' and T'' are among those other factors which never do remain the same.

These transactions, therefore, make the price-level of the equation of exchange for any given period different from the actual price-level. Goods transferred without money (T'') do affect the actual price-level, but they do not affect the price-level in the equation of exchange. Leather, for example, that is sold but not paid for in any given period has its part in determining prices of leather, and prices of leather have their part in determining the general price-level. But leather, if sold and not paid for, does not appear in the equation of exchange. Since it is not included in T, it cannot affect P. On account of these factors, which never do remain equal, the price-level in the equation of exchange (P) is the price-level of an imaginary period, never the price-level with which business has to deal.

When we look upon the equation of exchange as though it were a complete picture of trade, we naturally conclude that goods and money cannot affect price-levels within a given period of time unless they have actually been exchanged. This is one of the errors that is commonly involved in discussions of the quantity theory. "Neither goods nor gold," says Oswald St. Clair, "so long as they remain withdrawn from the two streams that are constantly measuring themselves against one another, exercises any influence on the ratio called price." [7] They do influence price, however, because the volume of money which is available but not used during a given period, and the volume of goods which are on hand but not sold, have their part in determining the policies of the banks in making loans and the extent to which merchants are willing to extend credit and to buy on

credit. Whenever merchants sell on credit, the goods are sold at a price, and the price has the same immediate effect on the market as though the goods were sold for money. Thus, by affecting the volume of goods transferred without money (T''), both goods and gold that are outside the currents of exchange may play a part in determining price-levels.

Furthermore, there are periods during which M'' and T'' fall far short of balancing. If this were not the case — if the volume of money transferred without goods and the volume of goods transferred without money actually did offset each other, or very nearly so, within a sufficiently short period of time — such transactions would not interfere with the practical uses of the equation of exchange in connection with short-time business ventures. Simon Newcomb assumed that they did offset each other. "Taking each year by itself," he wrote, "the chances are that the excess of industrial circulation arising in this way towards the end of the year will be balanced by the payment of debts incurred during the year before." [8] Probably there was no such balance even in his generation. Certainly there has been no such balance during the past decade. Whenever the price-level is changing, the discrepancies between M'' and T'' do not offset each other within any given year; and a year is time enough for a violent change in the price-level and for a business crisis. At certain stages of the business cycle, transfers of goods without money far outrun transfers of money without goods. At other stages, the opposite condition prevails.

These discrepancies could not be vast if, as some discussions assume, the volume of trade varied directly with the volume of production. It does not. Obvious as the fact appears, it is not taken into account by many of

those who slip in the phrase "other factors being equal." Among the other factors which do not remain equal is the relation between the volume of production and the volume of trade.

Quantity of Money and the Price-Level under "Normal Business Conditions"

In any given year, then, since "other factors" may be disastrously far from equal, the conclusions that are usually drawn concerning the relation of the quantity of money to the price-level do not necessarily hold true. Admitting this, however, there are many who contend that the conclusions hold true for short periods of time *under normal business conditions*, and that they always hold true *in the long run*.

In answer to that contention, it may be said that, from the standpoint of the immediate interests of business, any theory is limited in usefulness that applies only to "normal" conditions. Strictly speaking, there is no such thing as "normal" business conditions: "other factors" never do remain exactly the same or in exactly the same relations. If, however, we vaguely call business normal when, as in the period from 1909 to 1913, fluctuations in price-levels, in employment, in volume of production, and in volume of trade are comparatively slight, and if it is only in such periods that a given theory is useful, evidently it is not useful in those periods in which business men are chiefly interested and concerning which they are in greatest need of enlightenment. It is when prices are rapidly rising or falling, and the country seems headed for a boom or a depression, that there is most urgent need of further knowledge concerning the relation of money to prices. In such times, we are told, the price-level does not vary directly with the quantity of money.

Evidently it does not. When money is produced much more rapidly than goods, prices of goods are likely to increase out of proportion to increases in the volume of money. In Russia, for example, for a number of months following the World War, depreciation of money, according to J. M. Keynes, proceeded at least three times as rapidly as would have been possible had the quantity theory applied, without qualification, to this period. And in Germany, during 1922, according to the Manchester (England) *Guardian*, "panic demand for goods and foreign exchange drove prices and exchange rates to a height out of all proportion to increase in currency, fabulous though that appears." [8] This is not surprising. There is always a tendency to withhold goods when they are daily increasing in value, and to spend money when it is daily decreasing in value. When there is a general expectation that prices will soon be higher, more money is required to induce any one to part with his goods than when the price-level is relatively stable. In other words, increasing reluctance to part with goods for money has the effect of advancing prices *in anticipation* of new issues of money. For this reason, the price-level of any particular day within a period of inflation could not long be sustained without a still larger volume of money. Consequently, when the volume of money stops expanding, prices are likely to break quickly; and, once prices have stopped advancing, they move downward more rapidly than the volume of money contracts. Thus, whether prices are going up or going down, the changes are not in direct proportion to changes in the quantity of money.

The Quantity Theory in the Long Run

The "other factors" of which we have been speaking tend to remain equal only over long periods of time.

This is a circumstance that puts all statements of the quantity theory still further beyond the range of most of the immediate interests of the business man. "The theory may hold true," he says, "after this unsettled period of transition is over. Unfortunately for me, I have to do business throughout the period. It is the wages, prices, bank rates, and markets of to-day with which I have to deal. Before changes in the volume of money have had time to produce their full effects in accordance with the quantity theory, I shall have borrowed money, bought raw materials, paid workmen, sold the products, repaid the bank loans, and gained a profit or sustained a loss. Consequently, whatever the ultimate effects of monetary policies may be, I am forced to deal daily with the immediate effects."

It is true that *in the long run* those other factors tend to remain in constant relation to the four factors in the equation of exchange. The physical volume of trade tends to become equal to the physical volume of production, because eventually nearly all the goods that are produced are sold; and the excess, in any one year, of the dollar-values of goods sold over the dollars paid for goods tends to become balanced in subsequent years by the excess of dollars paid for goods over the dollar-values of the goods sold.

It is true, also, that, in the long run, the physical volume of trade is not greatly enlarged by increases in the volume of money in circulation. Quite the contrary is sometimes true, as recent trade reports from Europe bear witness. But when a country is on a gold basis, and business is in the doldrums, and large numbers of men are unemployed, an increase in the volume of money in circulation that promptly gets into consumers' hands as wages, or dividends, or bonuses, is an immediate stimulus to business.

As a result there may be and often is an increase in the volume of money and almost immediately afterward an increase in the physical volume of trade.

It is true also that, in the long run, the volume of stock speculation, in numbers of shares, is not greatly enlarged by an enlarged volume of money in circulation. But at certain stages of the business cycle, a considerable increase in the volume of money in circulation, or even low interest rates leading to an expansion of loans, is certain to be accompanied by increased activity in the stock exchanges out of proportion to increased production of goods. That this was the case in 1919 is evident from Figure 12 [9] which shows that the loans of New York City banks increased during that year of feverish business activity much more rapidly than the loans of all reporting banks. Any change whatever in the volume of money is likely to carry with it, in any given year, not only a change in the total volume of trade, but also still more important changes in the relative volumes of different kinds of trade. Furthermore, any change whatever in the quantity of money is likely to be accompanied by some change in the velocity of money, and by other changes in the circulation which are more important than changes in the velocity of money in general.[10]

Long-run changes in the actual price-level must be due mainly to changes in the relation between the volume of trade and the volume of money in circulation, because over long periods of time all "other factors" become minor if not negligible. On any given day, however, some account must be taken not only of material facts, but as well of what people think about the facts. Prices have to do with states of mind as well as with states of matter. Although in the long run changing price-levels must indicate changing relationship between the volume

of goods and the volume of money, it is true that, for a while and to some extent, the changing price-level may be due indirectly to the belief that something has happened or will happen to goods, or to money, or to both. Beliefs influence prices not only because they lead to changes in M and V and T, and in M'' and T'', but also because they affect these "other factors." In the long run, however, the price-level moves with real rather than with supposed or anticipated movements of goods and of money.

But, whatever may be true in the long run, the immediate effect of an increase or decrease of money in circulation is not an exactly proportional increase in the commodity price-level. Nor does a change in the commodity price-level always produce an equivalent increase or decrease of money in circulation. The slack may be taken up by other factors included in the equation of exchange, or by factors summed up in M'' or T''. As the volume of money changes, other factors that influence price-levels also change.

The Equation of Exchange is too General

There are other particulars in which the equation of exchange fails us in connection with our inquiries concerning the immediately practical affairs of business.

The equation of exchange in its general form fails to serve our purpose, first of all, because its price-level includes all goods and all services. It lumps together all commodity transactions, wholesale and retail. The equation is affected in the same way by the sales of the American Wholesale Corporation as by an equal volume of the sales of the Woolworth Stores. It is impossible, however, to analyze the causes or to follow the course of business fluctuations without distinguishing carefully

between money spent for goods at wholesale and money spent for other goods. Changes in the total volume of trade may have less to do with initiating business depressions and revivals (as we may be able to show later on) than changes in the relative amounts of money spent in consumption and in production. But the general equation of exchange deals only with grand totals.

The equation of exchange in its general form fails to serve our purpose, in the second place, because there are various other price-levels that have as much to do with the decisions of any given business day as the price-level of goods and services in general. There is not only a wholesale price-level for new goods and a retail price-level for new goods, but also a price-level for second-hand goods. There are price-levels for railroad freight rates and common labor, as well as for fuel and building materials. There are also price-levels for real estate, for money, for bonds and for stocks. It is with these particular price-levels, especially in their relation to other price-levels, that the banker and the business man is immediately concerned in the transactions of a given day.

Ordinarily, in current discussions, the term "price-level" refers to new goods at wholesale. But the wholesale price-level could not vary directly with the quantity of money, velocity of money and volume of trade remaining the same, unless the relative amounts of money spent for goods at wholesale and for other purposes — for goods at retail, for second-hand goods, for services, for real estate, for bonds, for stocks, and so forth — remained the same regardless of changes in the total volume of money in circulation. The fact is that they do not remain the same, individually or as a group: the proportions spent for these purposes vary greatly at different stages of the processes of inflation and deflation. For

certain practical purposes, therefore, we must qualify any statement of the quantity theory with respect to the particular price-level of which we are speaking. The price-level of goods sold at wholesale does not vary directly with the quantity of money in circulation, other factors remaining equal, but with the quantity of money spent for goods at wholesale, other factors remaining equal. Between money spent in consumption, moreover, and money spent for other uses, there is not a fixed ratio. On the contrary, various forces arise in the ordinary course of business which tend to alter, first in one direction and then in the other, the ratio between the money used to place goods on consumers' markets and the money used to take the goods away.

Nor does the equation of exchange separate money spent for capital goods from money spent for consumers' goods. Such a distinction would not be of great importance, in connection with studies of price fluctuations, if expenditures for capital goods always increased in about the same proportion as expenditures for other goods. But, as we shall show in later chapters, this is far from being the case and the consequences deserve study. Before we can make much use of the equation of exchange in explaining business fluctuations, we must take account of the relative flow of various kinds of trade.

At this point, lest our equations and figures of speech may convey the wrong impression, we should perhaps mention the fact that none of these changes in the flow of money are mechanical: they are all due to human choices: money flows wherever individual preferences direct the flow.

The Equation deals only with Velocity in General

Another deficiency of the equation of exchange is that

it deals only with the velocity of money as a whole. Here, again, quantities are lumped together which have different effects on business. Sustained production and sustained prices depend chiefly on the relationship between the use of money in consumption and the use of money for other purposes.[10] Therefore, we have less interest in the velocity of money in general than we have in the relative velocity of money used in consumption and money used for other purposes. If a given volume of money increases its rate of turnover, it makes no difference to the equation of exchange whether the increase takes place in wholesale markets or in retail markets: but it does make a difference to business. Indeed, it makes a crucial difference. If a million dollars in the hands of traders increases its velocity and thereby facilitates an additional transfer of a stock of leather on the way to shoe factories, it has precisely the same effect on the price-level in the general equation as though a million dollars in the hands of consumers had increased its velocity and had thereby increased the sales of retail shoe stores.[11] But it has a different effect on retail prices and consequently a different effect on business as a whole. The sales of finished goods to consumers do not vary directly with changes in the velocity of money used in wholesale markets, or in stock markets, or with changes in the velocity of money in general. In the long run, other things being equal, they do vary directly with the frequency with which money is spent in consumption. How long does it take for a dollar that is spent in consumption to get around to another use in consumption? In other words, what is the circuit time of money? And, during the circuit, how many times has the dollar been used to effect exchanges of a different character? With these questions, the equation of exchange has nothing to do. Yet, the answers to these

questions may go as far toward explaining business instability as anything we now know or are likely to discover concerning the velocity of money in general.[12]

Summary of Remarks concerning the Equation of Exchange

To sum up our observations concerning the equation of exchange, we should say, first of all, that it is a statement of fact: it is true without qualification. But conclusions drawn from it, on the assumption that other things are equal, would be applicable only to an imaginary business world. The equation of exchange is further defective as a basis for conclusions concerning the real price-levels of any particular year, because it takes no account of changing factors that affect price-levels, including transfers of money without goods, and transfers of goods without money. The equation of exchange, moreover, is too general to carry us far toward an understanding of the immediate causes of fluctuations in the specific price-levels with which ordinary business is daily concerned. It is too general because it lumps together exchanges of different kinds of goods that must be considered separately. It is too general, furthermore, because, in order to make progress toward an understanding of the causes of business depressions, we need to consider, not only the velocity of money in general, but also — among other factors — the frequency of the use of money in consumption compared with the frequency of its use for other purposes.

The Practical Value of the Quantity Theory

According to a common form of the quantity theory, the purchasing power of money, other things remaining equal, varies with the number of the units. We can readily assume conditions under which other things really would

remain equal and, consequently, the value of the unit would vary exactly in proportion to changes in the number of units; that is to say, conditions under which the purchasing power of the dollar would decrease in exact proportion to the increase in the number of dollars in circulation. But, as we have just observed, such conditions never exist in the complicated commercial world of to-day. Numerous factors, besides changes in the quantity of money, have their part in determining changes in the purchasing power of money. These other factors are so obvious, and so variable, and so difficult to measure, and at times really are of such importance, that the significance of the quantity factor is often obscured. Some of those who think of themselves as practical business men, as distinguished from theoretical economists, are inclined to reject, in all forms, what is called the quantity theory of money. Why waste time in even discussing conclusions which, according to their own champions, apply only to an imaginary world!

But should we impatiently reject considerations of quantity because factors other than quantity must be taken into consideration, and because the theory fails fully to explain the conditions that confront us at a given moment? Should we not rather remind ourselves that all relations — not only those that involve human beings, but those in the physical world as well — are exceedingly complex, and all theories would have been rejected in their entirety, if men had been unwilling patiently to study the varied operations of forces, under varied attendant circumstances?

We know, for example, that in general the heart action varies in proportion to the amount of a given stimulant, and this knowledge is put to timely, practical use by physicians all over the world. Rarely, however, can

any one predict, in any particular case, exactly what changes will result from a given quantity of a given stimulant. There are always other factors which tend to offset or to augment the effects of the stimulant. We do not, for that reason, scout the theory; we merely do our best, in each case, to discover and to measure those other factors.

To use an example which is even more familiar to business men, we may consider "the law of supply and demand." Every business man has profound respect for this so-called "law." He believes that he sees it in daily operation. Some of the favorite theories of economists seem to him to correspond not at all with what he sees going on about him in the familiar world of commerce; but to him the law of supply and demand is more than a theory, for he meets it at every turn. By the law of supply and demand, he usually means that if the demand for a given commodity increases faster than the supply, the price of that commodity goes up: if the supply increases faster than the demand, the price goes down. To illustrate by means of an example, he will tell you that if the number of men wishing to buy Walk-Over shoes, and having the money to buy them at current prices, increases faster than the supply of Walk-Over shoes, the price will go up; and vice versa.

If, however, our business man knows something about economic history, or is a careful observer of current events, he can cite instances in which increased demand has resulted in no change in prices, or even in lower prices. He knows that during the War increased demand for aluminum, out of proportion to increased supplies, did not result in proportionately higher prices. He can cite numerous widely advertised specialties — chewing gum, washing powders, to go no further — which were sold,

during the War and after, at the pre-war prices, regardless of the increase in the number of those who wanted these articles and in the amount of money they had to spend. And everybody knows that in recent years the demand for Ford cars has gone up and the price down. Evidently there are "other factors" that do not "remain the same."

Nevertheless, the business man's belief in the law of supply and demand, and his conviction of its great importance in commerce, remain unshaken. For whatever special circumstances may, for the moment, or, in the case of certain commodities, tend to obscure the operation of the forces of supply and demand, the man of business still considers them the factors which above all others he must consider in his attempt to explain or predict price movements.

If he applies the same reasoning to monetary problems, he will not discard the quantity theory of money as useless, merely because he has observed cases in which a known increase in the quantity of money has not been followed by proportional decrease in the value of the dollar; or cases in which changes in the price-level, which he has known only too well, have occurred with virtually no change in the quantity of money. On the contrary, he will look upon the quantity of money as the largest of the universal factors in the long-run determination of prices. And he will attempt to discover and measure those other factors which do tend, at times, to prevent the price-level from varying in exact proportion to variations in the quantity of money and to prevent the quantity of money from varying as prices rise or fall.

The connection between the quantity of money and the price-level is just as definite and clear as the relation between supply and demand and the price of a pair of shoes. If, for the moment, the connection is obscured by special

circumstances, we have only to take a broad survey of centuries of experience in numerous countries. We find that, invariably, notable discoveries of silver resulting in new supplies, in the days when silver money was more important than gold money, were followed by an increase in the price-level; and that, after gold became the measure of value of the leading financial nations, extraordinary increases in the supply of gold were followed presently by similar rises in the price-level.

We find, on the other hand, that when production of goods increased at a faster rate than the supply of gold, and when substitutes for gold were not used to make up the deficiency, there was a fall in the general price-level. From 1876 to 1896, for example, there were substantial increases all over the world in the activities that required a medium of exchange; but there was not a corresponding increase in the world's supply of gold, and prices fell in all the chief trading centers of the world. This movement was not checked in the United States, or elsewhere, until the quantity of money and substitutes for money increased out of proportion to increases in goods to be exchanged by means of money. Here, as in the case of the law of supply and demand, the connection is far from clear; it may even seem to be wanting altogether, if we fix attention upon any one country at any one time. But if we divest ourselves of all prejudice, and minimize the effects of local and temporary conditions by making long-range studies, in numerous countries, of price-levels and money quantities, our search brings us to a conclusion from which there is no escape. We discover that there have been no large, sustained movements in prices without corresponding changes in the relation of the volume of money to the volume of goods.

Quantity of Money and Prices during the War

Proposals to prevent a rise in the price-level by curbing the expansion of currency and bank credit are often opposed on the ground that any restriction of the volume of money would also restrict production. This objection is well founded when employment and business activity are considerably below the maximum. As prices rise, however, and the volume of unemployment is reduced, the time comes when a further increase of money and a further rise in prices do not increase production, but do increase the evils of inflation. Concerning this subject we shall have more to say in our closing chapter. For the present, we wish only to refer again to what we said, in Chapter V, concerning the effect in the United States of increasing money faster than goods during the World War. As long as increased bank credit enabled employers to put idle people and idle machinery to work, production was increased. The country soon reached the point, however, where it was employing virtually every man and every woman who was able and willing to work. At this point, competition among employers for materials and workers resulted in higher prices and wages and, consequently, in new demands on the banks for money. But bank credit created for the purpose of enabling somebody to take workers or orders away from somebody else did not increase production.

Though, for these reasons, production was not increasing, consumers' effective demand was increasing; for, with everybody at work at higher wages, the demand expressed in dollars was greater than ever before in the history of the country. In other words, wage-earners spent more dollars every day. To sustain production and expenditures at this level, banks were urged, in loyalty

to the country, to supply still more loans for the so-called "essential" industries, and for the purchase of Liberty Bonds and Government Certificates of Indebtedness. The banks were assisted in this process by the artificially low rediscount rates maintained by the Federal Reserve Banks. "Borrow and buy bonds" was the slogan of many campaigners. Thus the fundamental factors of the economic situation during the War were a need for labor and a need for materials, neither of which could possibly be fully supplied, together with a dollar-demand for labor and materials that was sustained by an expanding supply of bank credit. This increased purchasing power was thrown into markets in which the supplies of labor and materials had already reached their maximum limits. The inevitable result was a higher price-level. The close correlation between the increase in bank loans and the increase in retail food prices is shown in Figure 8.[13]

The influences which were thus working together to increase the volume and to decrease the value of money were not generally understood. "It is clearly to the interests of the people," said *Labor*, the weekly paper of the railroad brotherhoods, "that further credit should be created by the Federal Reserve Banks — to cheapen production costs, to facilitate transportation and marketing of farm products and thereby effectively reduce the costs of living" — at a time when an increased quantity of bank credit would have had exactly the opposite effect. An understanding of the quantity theory of money would have made this clear.

This explanation of price fluctuations has been questioned because, it is said, the decline in prices in 1920 *preceded* the reduction in the volume of money.[14] That is true. In 1920, the fall in the price of most raw materials and finished products was initiated by a restriction of

credit which served notice on producers that they could not get more loans freely. Hence many, to insure solvency, kept idle funds. Some increased their loans, in order to

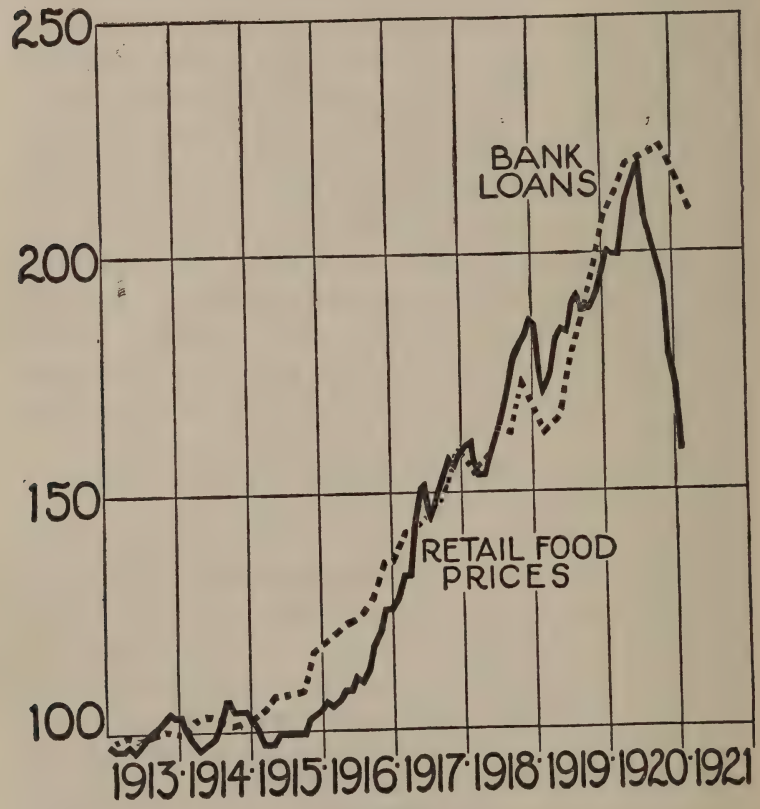

FIGURE 8

have sufficient funds on hand in case other indebtedness had to be paid. To get cash, there was a great unloading of stocks on hand. The Ford Company, for example, liquidated its inventories throughout the country. Many other companies had to adopt an equally determined

liquidation policy because the banks had nearly reached the maximum limit of their credit facilities. Since the banks would not finance a further increase in prices, the upward movement of prices had to stop. Once the advance was checked, the unloading of speculative holdings started the most precipitous decline in prices in the history of the country; but it was not until later that there was a decrease in the money supply. In this particular case, then, the decline in prices preceded the decline in the volume of money.

There have been other cases, however, in which a reduction in money, with no corresponding reduction in goods, preceded and was the primary cause of a reduction in prices. There have been still other cases in which the primary cause was increase in volume of trade, due to improvement in methods of production and distribution of goods, with no corresponding increase in money. In some instances, increased prices are due to increased consumers' demand that results from increased money. In other instances, an increase in prices is attributed to an increase in consumers' demand when it is, in fact, only an increase in dealers' demand. In still other instances, the bidding up of wages and material is *followed* by an increase of money in circulation, which dealers and manufacturers require in order to finance their operations at the higher scale of prices. The common error is the assumption that it is always prices that affect the volume of money, or vice versa.[13] As a matter of fact, it is sometimes prices that affect the volume of money and sometimes the volume of money that affects prices. Usually it is a combination of the two, reacting upon each other.

Whether an increase in the volume of money initiates a rise in prices, or vice versa, matters relatively little. The main point of practical importance is that in no case

could a general advance in prices *continue* if it were not possible to increase the supply of money. If European countries, during the War and after, had taken this fact sufficiently into account, they might have prevented the human suffering due to unstable money which, as we observed in earlier chapters, surpassed the suffering directly due to the War itself.

CHAPTER XI

MONEY AND PRICES

SETTING aside all consideration of price-levels, we may now turn to the function of individual prices. For the purposes of this discussion, it is imperative that we keep clearly in mind the distinction made in the previous chapter. By individual prices we mean the exchange value of any commodity — say a ton of coal or a barrel of flour — in terms of dollars. By the general price-level, we mean a composite of all prices; that is to say, the cost of coal, flour and everything else at one time or place compared with the cost of the same things at another time or place. The paramount interest of every community in the price-level is clear and simple; it is summed up in the word "stability." Where the price-level happens to be is of minor importance; the major need is that it should stay about where it is. The interest of the community in individual prices, which is not so obvious, is the subject of the following discussion.

In the first page of our first chapter, we observed that nothing is more widely discussed to-day by thoughtful men and women than the recurrent plight of society in finding that there are millions of men who are able and eager to work, abundant tools to work with and materials to work upon, millions in need of goods, and no way of bringing the men, machines and materials into productive relations to each other. We raised the question whether this is not mainly a price problem, since it is almost exclusively by means of money that productive relationships are maintained, so far as they are maintained

at all, among men, machines and materials. We observed that human interests, ambitions and activities tend more and more to center around money; that economics, most profitably considered, is the science that deals with human affairs from the standpoint of price. It seems certain, therefore, that no one can solve the problem of periodic business depressions, or any other major economic problem, who has not first solved the problem of the meaning of price.

The Economic Function of Price

The economic function of price is to bring about the production and distribution of goods. Apart from "customary prices" and conditions of monopoly, which require separate discussion, prices have one major interest for society as a whole: prices do or they do not move goods. This concept is fundamental; we must hold fast to it. Pertinent questions do, indeed, arise at once. What kind of goods? How much of each kind? For what period of time? Distribution to whom? Such questions we may well set aside until we understand the basic proposition that the purpose of price is to move goods. And by moving goods we mean, throughout our discussion, moving them at the rate of maximum, continuous productivity. When prices do not move goods, a period of depression ensues, with the familiar trend of falling prices, cancelled orders, frozen credits, closed factories, unemployment and passed dividends. Such a depression comes whenever, following a marked decline in the prices of several important commodities, there is a falling-off in the buying of goods from producers. Such a decline is the center and starting-point of all our difficulties. Any interference with the orderly and continuous movement of goods into consumption makes economic maladjustments the im-

portance of which has never been exaggerated, not even in the literature of social reform which has tendencies toward exaggeration. Production cannot long proceed at any given rate unless daily purchases take the goods away at the rate of production. To bring about that movement of goods is the function of price.

Before continuing the discussion of this subject, it will be well for us to stop long enough to give further emphasis to the fact that we are leaving out of consideration the exceedingly important cases in which monopoly and partial monopoly prevent prices from completely fulfilling their economic function. In the case of a monopoly, the competition of buyers does not meet the free competition of producers. Therefore, the efforts of consumers to obtain goods, while they tend to drive up prices, do not have, necessarily, the compensating influence of stimulating increased production of these goods. Thus, the competition among buyers of aluminum, for example, does not affect the supply as does competition for a commodity like cotton cloth that can be freely produced. Consequently, prices of monopoly-controlled commodities may move goods, as government-controlled railroad rates may move trains, but without the economic effects that follow when the volume of production is determined by the free competition of buyers. Before proceeding with this complicated subject, we should also emphasize the fact that we are leaving many of its phases untouched; we are setting aside cases, for example, like that of gasoline, in which consumers buy the total output, regardless of quality, and leave the producers no adequate incentive to improve their product. We are here concerned only with main tendencies. We are well aware of the fact that every reader will think of exceptions to the general rules, and the further fact that, however inexorable economic

law may be, it does not take effect instantaneously. "It is not a policeman who arrests a criminal the moment he finds him committing a crime. It is a potter gradually shaping a plastic material to his will."[1]

Right Prices

When we speak of "right prices," as we frequently do, we are in danger of confusing moral and economic issues. There is a right temperature for baking bread, a right mixture of air and fuel for a gas engine, a right rainfall for growing wheat. In each of these cases something is scientifically right for a specific purpose, and its rightness can be proved by measurement but not by personal opinion. Similarly, in the science of economics, the extent to which prices function is a question of fact. It is confusing issues to call anything wrong because it fails to do what it is not designed to do. There is something wrong about a steam-roller for the purpose of pleasure riding, but there is nothing morally wrong. Prices may be wrong for the purpose of bringing relief to destitute families, but not morally wrong; prices are not charitable institutions. A true conception of the function of price underlies the common remark: "When prices are right, I will buy." It would be even closer to the truth to say: "When I buy, prices are right." The fact that people buy is, indeed, the proof that prices are right. When people do not buy, prices are wrong; wrong from the standpoint of the function of price, wrong solely because they do not bring about the production and exchange of goods. Business discovers that prices are right when goods are sold. There is no other test. It follows that prices cannot be right for business when they are wrong for consumers. Broadly speaking, and subject to the qualifications already given, the "rightness" of prices consists in their capacity to move goods.

To attempt to fix prices in the interest of any other purpose is to have a part in defeating that purpose. If, as social reformers, we insist that prices or wages be fixed with reference to a given standard of living, we insist on an interference with economic forces that would defeat our aim by hindering the very movement of goods to consumers upon which the maintenance of any standard of living depends. If, as producers, we insist on keeping prices sufficiently high to yield a certain profit, we may forestall all profit by discouraging sales. If daily purchases are not sufficient to take up the daily production, prices are off; but nobody can tell how far off they are until, in the ordinary, widespread experience of the markets, prices are discovered that move the goods.

If, as consumers, we attempt to reduce prices by arbitrary restriction of profits, we may discourage production; and consumers cannot long benefit by restricted output, no matter what happens to prices. It is as important for buyers as it is for sellers that business should proceed, year in and year out, at a profit: otherwise prices cannot continue to play their full part. Sometimes "sacrifice sales" involve no sacrifice at all: sometimes the community makes the sacrifice. Ordinarily, if goods are moved at prices that injure necessary business concerns, the people as a whole pay the penalty: to have merchants really "selling out below cost" is not for the long-run interest of consumers. Once, however, we have boosted the level of prices and then fallen into the depths of depression, some stocks must be sold at a loss. In this case, prices that move goods in such a way as to start the idle wheels of industry are ultimately beneficial alike to buyers and to sellers. If, following the depression, the general price-level is again allowed to swing sharply upward, prices may move goods but presently may move them

into unusually large speculative holdings rather than into consumption. Such prices do not facilitate the long-run production and distribution of goods: they lead to another depression. All of which illustrates our introductory remark that prices cannot continue to play their full part, with or without government regulation, on sharply fluctuating price-levels. And all of which will appear in a new light when we come to discuss the circuit flow of money from consumer back to consumer.

Consumers control Production Schedules

If the function of price is to move goods, the question arises, what goods? In answer to this question, Major Douglas and his numerous followers contend that the existing system of production gives to the individual consumer "no say whatever as to the quantity, quality, or variety of ultimate products." [2] We would say, on the contrary, that nobody but individual consumers have much to say about these matters. When they are left as free as possible from the restraints of monopoly and of government, they determine for the most part what is to be produced. Sellers may do their utmost by means of advertising and salesmanship to influence choice; but after they have done their utmost, the choice remains with the buyers. The prices they pay to-day are, in effect, orders for future production. Leave them alone and they'll come home, bringing the goods behind them. People who spend money thus determine what will be produced, because those who produce succeed only if they make what people with money to spend wish to buy. As a result, production which is not determined by the buyer necessarily remains small in volume. It is self-limiting. It is confined to goods produced by those who mistake the buyers' wishes or carry on business for their own satisfac-

tion. A publisher may produce unsalable books because he misjudges demand, or he may publish profound technical treatises at a predictable loss merely because he thinks they ought to be published. In either case, he is an exception to the rule simply because his business is sterile; it does not yield the means of reproduction. As a rule, production must be governed by the wishes of the people who spend money. And they express their wishes — cast their votes, so to speak — by the very act of spending the money.[3]

When price thus plays its part freely, it answers the question how much of each commodity shall be produced? When consumers are willing and able to pay a higher price for "Pheasant Canton Crêpe," more is produced; when they are unwilling or unable to pay as much, less is produced — assuming that producers have adequate knowledge and that exceptional factors do not control the situation, assumptions which we are all well aware are often contrary to fact. In the long run, however, the prices at which goods are sold — not, let us observe in passing, the prices at which goods are *offered* — regulate the scale of production of each commodity.

This is a democratic means of determining what is to be produced. In the domain of commerce, every human being has a vote every time he makes a purchase. The suffrage is weighted, to be sure (a point we shall consider presently); but, at least, no one is disfranchised on account of age, sex, race, religion, education, length of residence or failure to register. Every day is election day. The buyer casts his vote wherever he goes. The votes are counted at once and with few errors; the cash register is as dependable as the ballot box. Those in charge of the polls are dependable, too, for it pays them to have prompt and accurate records of the voters' choices.

With his dollars, the buyer votes for his representatives in production. He votes to continue in office those, and only those, who make the articles he buys. The managers of industry are, therefore, a responsible ministry, much more amenable to public control, as a rule, than politicians. "Big Business" is not and cannot be the autocratic thing it is often said to be. Even the United States Steel Corporation must heed, from day to day, the votes of the buyers; it has no more to say about what it will produce than the village blacksmith. Publishers, too, must watch the election returns. Of three newspapers in a certain city, one will soon be obliged to suspend publication. Which shall it be? The people will decide. Just as surely buyers are now deciding which manufacturers of automobiles are to be allowed to continue producing, and which of the two hundred or more makers of tires — five of whom are equipped to supply the total demand — are to go out of business.

Competitive Business is Democratic

Competitive business is more democratic than the most democratic of governments. Even after many generations of struggle against autocracy, there is nothing comparable in politics to the free and universal suffrage of buyers of goods. As a voter, the citizen often finds it impossible to make his wishes effectively known. Most of his decisions are made for him by politicians who have trouble in representing all their constituents, directly and accurately, even when they desire to do so; and who, when they desire to misrepresent them, have various means of concealing their action or shifting responsibility for it. Many political votes count for nothing. It is estimated that forty-two per cent of the voters in New York City in the municipal election of 1921 were unable

to elect any representatives at all merely because they happened to live in certain districts.[4] Even when a citizen can make his vote count, he often has to choose among candidates, no one of whom he wants. The *Literary Digest* straw ballot of 1920, the most extensive ever taken, indicated that neither Mr. Harding nor Mr. Cox was the first choice of one voter out of thirty; yet at the polls all voters had to choose between these two men or throw away their votes. For Mr. Hoover, who had 240,468 first-choice votes in the straw ballot, the Republican Convention did not cast a dozen votes, but nominated Mr. Harding, who was the first choice of only 36,795 voters. The whole wide range of industry now offers no apparent disregard of the wishes of consumers comparable to this. The majority of seven million votes in the election of 1920 has been called "a clear mandate of the people against the League of Nations." As a matter of fact, it was anything but clear, positively or negatively. When, on the other hand, seven million people buy Brown's chewing gum, it is a clear mandate for future production. In 1920, if any one wanted a book in favor of the League of Nations, he bought it; but if he wanted to cast a vote in favor of a League of Nations, he could find no way of doing it. Too many issues were involved. Slow, clumsy, indirect, and uncertain, as a rule, are the available means for expressing the voters' political desires. In short, the consumer's dollar, in the economic sense, is always an effective demand; his political vote is often far from being an effective demand.

As a spender of money, the voter ordinarily has no difficulty in taking direct action in accord with his wishes. If he wants to buy a copy of Brown's Magazine, he does not find himself thwarted by such complications that he is forced in the end to choose between Snappy Tales and

The Frantic Weekly. If he wants a Brown typewriter, he does not have to select, on the basis of a platform of vague promises, a dealer to represent him in the markets, only to find, in the fullness of time, when the dealer and his fellow dealers get around to it, that he has to put up with a compromise machine and pay the bill, whether or not he wants that machine. On the contrary, he places his order directly with the Brown Company. Within a few hours, or at most a few days, he gets exactly what he has ordered. Almost as promptly, his action plays its part in determining the future production of typewriters. In fact, it is his vote for this particular commodity, plus all the other dollar-votes he casts, plus all the dollar-votes of all other buyers, that determine the production-schedule of the world. Every dollar counts; minorities do not throw away their votes; and scarcely any one can refrain from voting. Thus, in ordinary times, consumers make daily use of a system of proportional representation that is more nearly perfect than any of the systems which idealists have proposed for political elections.

The System is not without Defects

In so far as the system is ineffective in times of peace, it is because producers, through ignorance of facts that are now beyond the reach of private enterprize, or error in judging the permanence of the market, miscalculate the nature and extent of the demands of buyers, with resultant "over-production" and "under-production." Certainly the system can be made more effective, for it will not be difficult to inform producers, more promptly and more accurately than hitherto, concerning the trend of effective demand in relation to stocks on hand and under way. By means of this information-service, and by other means to be suggested in later chapters, rather

than by means of price-control, the Government will find its opportunity to aid in stabilizing production. But, even when producers are fully informed, have we any reason to rest assured that they will be governed by the wishes of consumers? Certainly we have, for under a competitive system in which men must sell goods at a profit, or go out of business, there is ordinarily a quick response to consumers' demand.

In time of war, however, the aim of production is no longer the immediate satisfaction of the individual wishes of those who have money to spend. The sole aim is winning the war. This radical and sudden change from an individual aim to a collective aim demands a radical and sudden change in the method of deciding what shall be produced. The two aims are in sharp conflict. It does not help matters to stop to consider why the aims ought to be identical: the conflict remains. Because of this conflict, it is stupid to talk about "business as usual." When war strikes, nothing in the economic world is, or can be, "as usual." In ordinary times, as we have explained at length, the greatest possible satisfaction is attained by allowing each spender of money, unrestrained by the Government, to have his part in determining what shall be produced; and he plays his part by bidding for what he wants in the open market. In war time, however, this method prevents the state from mobilizing its resources, because the very money that the Government spends creates competitors for what the Government wants, without increasing the supply. So the state undertakes to destroy or divert ordinary economic forces. Once the state has suspended the operation of these forces by arbitrarily fixing the price of coal, for example, or the wages of train men, the whole intricate, established system of relationships is broken down. We cannot do "bus-

iness as usual" in a world in which price is not allowed to serve its usual function.

The People decide how much shall be produced

Prices are not right, we have said, unless they stimulate production at maximum capacity. But what do we mean by maximum production? Evidently no country has ever produced all that it could produce. Estimates of the capacity of the United States vary considerably, but all agree that the country has at no time reached its possibilities. How much should a country produce? Full consideration of that question would take us far afield into disputed problems of philosophy. Everybody will agree, however, that if the aim of production is the satisfaction of human wants, production defeats its own purpose if it involves sacrifices which more than offset the enjoyment of the goods produced. When, therefore, we say that right prices are those which stimulate a country to its maximum, continuous output, we mean the maximum production which is consistent with human satisfaction. Where the line should be drawn is not a pressing problem, nor is it likely to become one, for human nature is sufficiently protected against excessive sacrifice of this kind. During the World War, at certain blast furnaces in the South, many negroes, as soon as their wages were doubled, worked only half as many days as formerly. They had no difficulty in balancing, to their own satisfaction, their pain as laborers and their pleasure as consumers. Human beings everywhere, taken as a whole and in the long run, except when price fluctuations and unemployment prevent, adjust their efforts as producers to the maximum possibilities of their pleasure as consumers. No other means of effecting that adjustment could be so prompt, so sensitive and so sure as right prices — the

right wages, on the one hand, to induce people to make their efforts as producers; and the right prices, on the other hand, to induce them to part with their money as consumers. Thus the people themselves decide, through innumerable choices made daily on the basis of wages and prices, how much a country ought to produce, provided — and this is a proviso of such importance that we shall make it the central theme of the rest of the book — provided enough money flows into consumers' hands to enable them to buy, at the current price-level, the commodities that are produced.

By controlling Prices the Buyer controls Production

If the buyer is to control production, he cannot escape the responsibility for controlling prices; for it is only through fixing prices that he can fix production schedules. It is the buyer, not the seller, who makes the final decision as to price. The only price the seller can fix is the price at which goods are offered; the buyer fixes the price at which they are sold. This may sound like nonsense to a man who has just bought a hat. When he entered the shop, he found the hat already priced, and priced too high to suit him; yet he had to pay the price or leave the hat. Nevertheless, he and all other buyers, exercising their freedom of choice in the open market, and bidding for the same goods, fixed the price at which that hat was sold. Naturally, no price can be satisfactory to buyers individually, as long as collectively they desire more hats than there are hats in existence. Whenever anything is sufficiently scarce and sufficiently desired to command any price at all, more than one man will want it. This antagonism of interests is one of the most fundamental of social facts. It cannot be overcome by price fixing, or currency measures, or government control of distribution, or any other program whatever.

The hatter is under no delusion concerning his own control of prices. He knows that in filling out his price-tags, he must guess right concerning the action of buyers or guess again. His own customers will let him know when he guesses right. Meantime, in each shoe store and each clothing store, the customers are likewise informing each merchant what his selling prices must be. There is no other way of accounting for the fact that buyers on Fifth Avenue pay fifty dollars for a coat, while buyers two blocks east pay only thirty dollars for the same article. The facts of the situation are such that no price-agreement among merchants could be made effective. The buyer holds the strategic position.

An industrial engineer, H. L. Gantt, is said to have estimated the productive efficiency of the United States in 1919 at about five per cent, — presumably in comparison with the conceivable production of a far different race of human beings. "He was under no delusion as to the cause of this," says C. H. Douglas. "It was because it did not pay those in control of the industrial process to make it any higher, not, be it noted, because those operating it did not know how." [5] This is a widespread belief. Managers of industry are constantly charged with limiting production in order to maintain prices, and thus make larger net profits. Those who make the charge overlook the fact that it is only under the exceptional conditions of complete monopoly, or agreements that bind all the producers of a given commodity, that output is subject to such control. Where competition prevails, the profits of the individual producer depend, as a rule, upon his industrial efficiency. He has no incentive to limit *his* output. The net result is that producers as a whole are constantly striving to produce more goods at the same or lower costs : since they must compete with

other producers for the same customers, they are constantly striving to be in a position to sell, if buyers insist, at lower prices than any one else.

The strategic position of the buyer is due to the substitution of money for barter. The real facts are obscured by traditional discussions of price which draw their illustrations from a primitive state of barter, or school boys swapping jack-knives, or an auction sale in the country, or a tourist and a street vendor in Italy haggling over the price of a string of beads. Such trading conditions give imperfect ideas of price-determination in modern markets. Nowadays, most prices are not reached through barter, or auction, or haggling. The introduction of money and banks, followed by the development of large-scale selling agencies and telegraphic connections among the markets of the world, has put the buyer in a new position. Because of the three choices which go with his money — as to time and place of spending and as to goods — the buyer ordinarily has the advantage of position.[6] The seller, on the other hand, has but one choice — namely, to sell for whatever price the buyer decides to pay for his goods, or keep the goods. And this is not much of a choice, as keeping the goods usually invites bankruptcy.

Fourteen years ago, in the automatic bargain basement of a large department store, customers were invited to fix their own prices. The announcement was made that all goods remaining unsold after twelve selling days would be reduced in price twenty-five per cent; after eighteen days, fifty per cent; after twenty-four days, seventy-five per cent. After thirty days, all goods remaining unsold were to be given away. The failure of the plan was freely predicted. Surely, the critics said, most people would wait a few days in order to take advantage

of the automatic price-reductions. But the critics overlooked the fact that in the automatic basement, as well as in the rest of the store, buyers would compete with each other for the same goods; and the individual buyer could wait for lower prices only at the risk of having others get the goods. He did not wait: during a representative year he bought 88.4 per cent of the merchandise at the original price.

Even the largest corporations, in many instances, could not reduce the retail selling-price of their products, no matter how much they might desire to do so. The United States Steel Corporation may be as good a case in point as any other, since it is often cited as an example of autocratic control of prices. As a matter of fact, when the Steel Corporation pegged the price of its pig-iron at thirty-eight dollars a ton, at a time when buyers were ready to pay forty-two dollars, there was no consequent reduction to consumers in the prices of iron products. Buyers of pig-iron took all they could get from the Steel Corporation at the lower price, and for the rest of their requirements paid a higher price to the independent producers. The buyers, however, were able to base the prices of everything they made out of this raw material on forty-two dollar pig-iron because the consumers were able and willing to pay these prices. Consequently, whatever the buyers of pig-iron saved by the action of the Steel Corporation in keeping down its price, meant no saving whatever to the ultimate consumers who fixed the final sale price.

Because of the failure of the buyer to understand the function of price and his part in the sale of goods, he is constantly trying to place on somebody else the responsibility for the cost of living. That is to say — though he would not say it in this way — he would like to pre-

vent others from buying what he wants to buy. This spring he desires the latest shade of tanned shoes; nothing else will do. The price, however, seems to him exorbitant. He overlooks the fact that he, himself, in exercising his consumer's privilege of directing the production of shoes, has boosted the price of the style of shoes he chooses. He insists on the personal right to walk into the butcher shop and select his cut of beef, but he protests against the high price. He does not perceive that he, in conjunction with all other buyers of beef, has made the price of those selected cuts three times as high as the price of certain poorer cuts. Who is to get the better cuts? What price is to be paid? Here are two ways of asking the same question. Under the prevailing system of price-bidding, the consumers themselves decide. And they are accustomed to no other method of decision.

The question arises here whether human satisfactions would not be larger ultimately if industry were directed by means of price-control so as to satisfy a higher level of tastes. Would not the reduced production of "comic supplements" — which, as Dr. Crothers says, throw such a lurid light upon our boasted sense of humor — eventually mean increased satisfaction to the people through the diversion of productive powers to higher forms of art? Consider, as further examples, hair-dyes, high-heeled shoes, pleasure automobiles, bill-boards, headache powders and free verse. Should not the prices of these commodities be made for the purpose of curbing their production? On first thought, the idea may seem excellent; but on second thought, the practical and perplexing question arises, who is to decide what is best for the people, if they are not to decide for themselves? And that is not the only difficulty, for even if autocratic control were desirable, attempts to lift the level of human tastes by

interference with prices would be costly and ineffective. Other methods are preferable. The function of price is economic, not moral or educational. Prices have done their full part in production when they have brought to the market what the people actually want who pay the prices. If the resources of the country were employed to put upon the market what somebody thought the people ought to want, one of the certain results would be the decreased satisfaction of the people. It would not matter how well-meaning that "somebody" might be. No one — teacher, congressman, minister, or social worker — whose effort is directed toward lifting the desires of people to a higher level, need be concerned about the economic problem of satisfying those new wants. As soon as wants are really changed, the changes will be recorded and measured by dollar-votes, cast in the ordinary round of daily marketing. Corresponding changes in production will follow much more rapidly than such changes could be brought about in any other way than through the ordinary, direct influence of price.

Price Control of Production is Most Effective

The objection will be raised that the consumers' franchise, with its property qualification, is undemocratic: it is heavily weighted, like the political franchise in Prussia before the War. In other words, the influence that any one consumer can bring to bear upon production varies directly with the amount of money he has to spend. True; and it may be that, as a result, human productive powers are not directed to yield the highest possible sum total of human satisfactions. But the fault is not with distribution according to price. We shall clarify our thought if we avoid confusing two distinct questions. One question is this: Who is to decide what

shall be produced in exchange for the dollars of each purchaser? The other question is this: How shall the total number of dollars be apportioned among the purchasers? They can be apportioned equally (and can thus, according to some theories, direct production to the maximum satisfaction of society as a whole) only under complete communism. But the point we are here stressing is that, no matter how the total purchasing power is apportioned, the fact remains that the established methods of determining prices and production — though not perfect — are extraordinarily effective methods for guaranteeing each buyer exactly what he wants up to the limit of his dollars.

Even if the total purchasing power were distributed equally, consumers would still want to control production. Let the reader try the matter out for himself — no matter who he is, no matter how rich or how poor, no matter how conservative or how radical. To whom would he be willing to turn over the decision as to what should be produced as his share of the total industrial output? To a city council? To bank directors? To labor union officers? To Congress? To the Federal Council of Churches? Which of his choices would he be disposed to delegate? His choice of food? Amusements? Books? Cigars? There is but one answer. Even if his claim upon the total output were precisely the same as that of every other consumer, he would still prefer to exercise the freedom of personal choice; and the most effective way to register his choice would still be through dollar-votes. He does not need the recent tragic experience of Russia to convince him that slow and bungling would be the best efforts in his behalf of even the most devoted official directors of production.[7]

In the industrial world, fortunately, we are not forced

to put up with such an inefficient method of apportioning control. Not that the prevailing method of deciding what is to be produced yields exactly what is of most worth. Some of our conspicuous wasters cast dollar-votes in production out of proportion either to their intelligence or to their service to society. It may be that much progress must be made in the distribution of purchasing power before our dollar-votes will keep the machinery of the world at work turning out in all cases exactly what is best for the world. But, again, we must remind ourselves that the function of price is not ethical, but economic. We cannot bring about a more equitable distribution of the purchasing power through arbitrary price control. Whatever the defects of our economic order — and their seriousness we noted at the outset — the fact remains that our weighted dollar-franchise expresses the economic desires of the world much more quickly and accurately than our unweighted, democratic, universal suffrage expresses the political desires of the world.

Prices are a Measure, not a Cause, of Trouble

It follows that prices are a measure of trouble, not a cause of trouble. That is why (excepting always, as we did at the outset, cases in which competition is prevented from having its full effect) it is useless to attempt to change the real cost of living by attacking prices. The people of the Miami district gained nothing by finding fault with the rod that measured the rising waters at Dayton: they protected the city from floods only by going back to the sources of trouble and making provision for an even flow of water. When we find fault with the prices at which goods are sold, or indiscriminately condemn merchants as "profiteers," or blame producers as a class for raising the cost of living, or banks for making

money dear, or household servants for the wages they obtain, we are attacking signs. We are trying to reduce the temperature by smashing the thermometer.

That is what governments have done, for the most part, whenever they have tried to reduce the real cost of living by prosecuting "profiteers." That is what Federal agents did when they took to task the restaurant proprietors of Boston. That is what the Committee of Manufacturers and Merchants on Federal Taxation tried to do through Government regulation of ground rents. That is all we can say for the attacks on retail clothiers and retail shoe dealers made by the Department of Justice at Washington. That, again, is what Representative Herrick proposes to do by means of his bill for the standardization of all wages and all prices, and Senator Ladd by means of his bill "to reduce the rate of interest on loans." [8] And that is precisely what New York City did in 1921 by carrying on a campaign against high rents in general, and then making the further mistake of abating taxes on new buildings in an attempt to repair the damage done by its initial interference with economic forces. These are all misguided efforts. For the most part, "profiteers" do not make high prices: high prices make "profiteers." And buyers make the high prices. As Gustav Cassel said in his memorandum to the League of Nations, "the popular idea that a rise of prices can be prevented by legislation enacting maximum prices and inflicting severe punishments on speculators and profiteers while the country is insistently flooded with fresh money is a fallacy which it is very important to get routed out." [9]

With what we have just said about the folly of government regulation of prices, many will not agree. Even so, we hope that they will reconsider the question in connec-

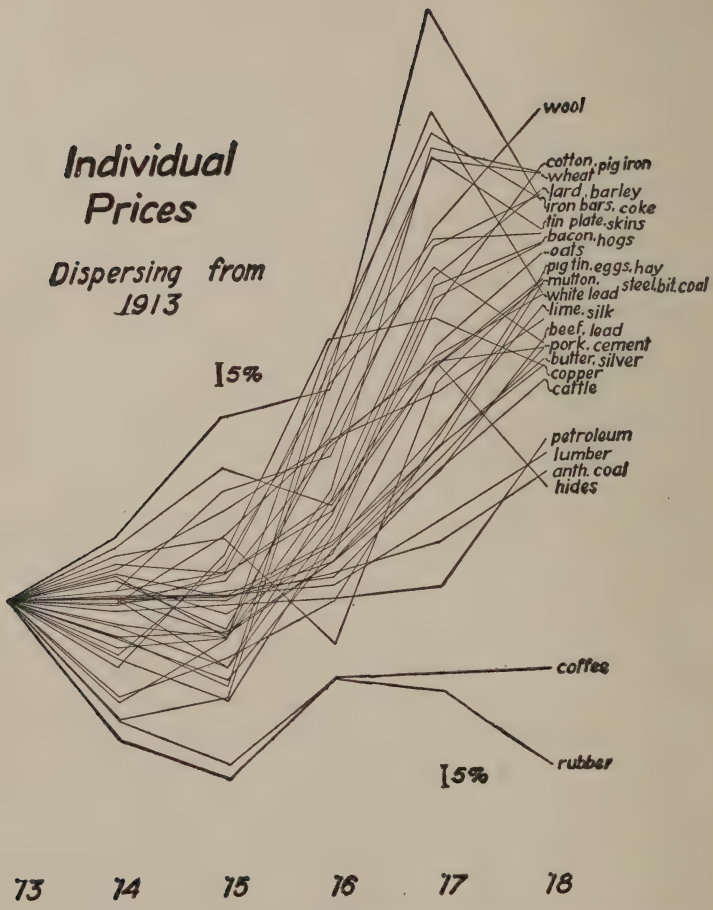

FIGURE 9. SHOWING THE WIDE DISPERSION OF THE PRICE MOVEMENTS OF 36 COMMODITIES FROM 1913 TO 1918

The vertical line, marked "5%," helps the eye to estimate the fluctuations. With the aid of this measuring rod, it is easy to see, for example, that in 1917 coffee was about five per cent higher in price than rubber, and petroleum about twenty per cent higher than coffee.

Figures 9 and 10 are taken from *The Making of Index Numbers*, by Irving Fisher, Number One of the Pollak Publications.

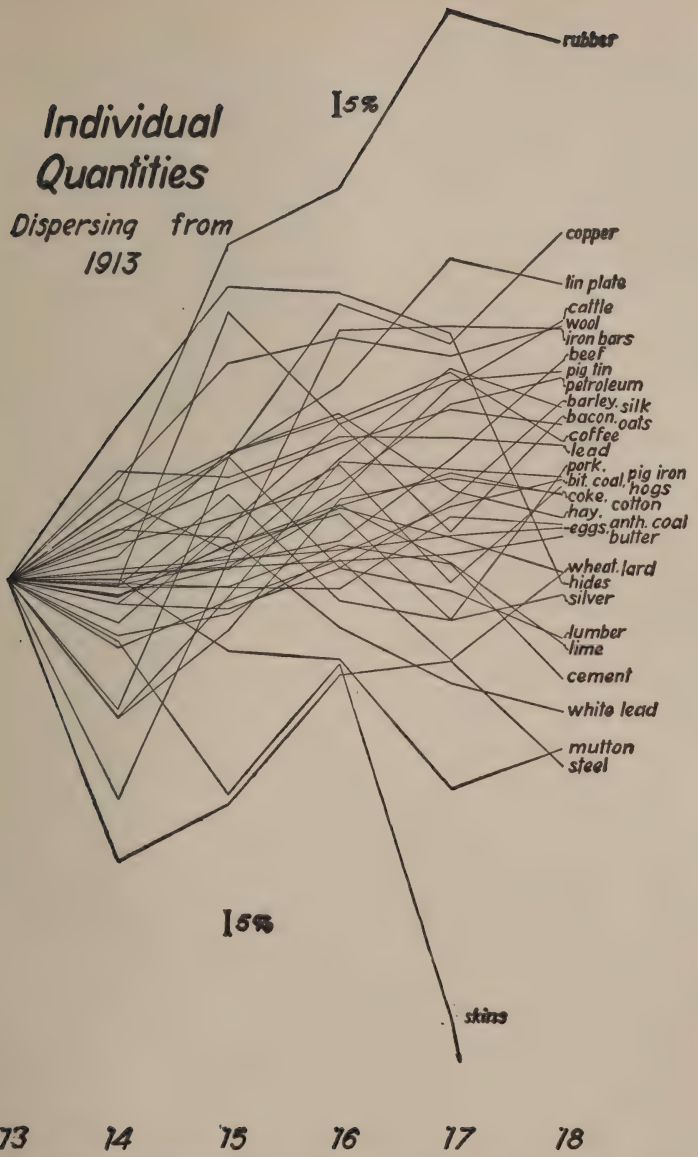

FIGURE 10. SHOWING THE WIDE VARIATIONS IN THE QUANTITIES MARKETED OF THE SAME 36 COMMODITIES

tion with what we have to say later on about Money as Suspended Purchasing Power and Money in Relation to Goods, for the discussions in these chapters give a new basis for the traditional objections to government regulation of prices. At this point, we suggest that those who object to our conclusions examine Figure 9, which shows the price movements of thirty-six commodities from 1913 to 1918, and Figure 10, which shows the changes in the quantities marketed of these same commodities. Now, the relation to each other of these prices and the relation to each other of these quantities were determined for the most part, as we have shown, by buyers in the ordinary, daily course of marketing. If these are not the price movements which should have taken place since 1913, the question arises, what should have been the price dispersion? How could any one figure out in advance what ought to be the relations among these prices? Evidently, no one could decide what these thirty-six prices ought to be without deciding what thousands of other prices ought to be; for there must be a right relation of every price movement to every other price movement. In the face of these difficulties, how could even the ablest of Federal agencies achieve anything but confusion? As a matter of fact, in order to fix prices that would regulate production schedules and distribute the products as closely in accord with the desires of the people as the prevailing system of price-bidding, the Government would have to devise some means of measuring the almost infinite number of daily changes in the needs and desires of millions of people, and also some means of measuring the almost infinite number of daily changes in the goods offered by the markets of the world for satisfying these changing needs and desires. These measurements are made at present with amazing precision by millions of buyers and sellers: no government is equal to such a task.

Although buyers have little to do with initiating changes in the general price-level, they have nearly everything to do with the relation of prices to each other on a given price-level. Did the price of sugar seem outrageously high at twenty-five cents a pound? Buyers put the price where it was in relation to other prices. It was as difficult to prevent them from hoarding sugar at twenty-five cents as it was later on to persuade them to buy it at five cents. As soon as a strike against clothing dealers was organized in the form of "overalls brigades," did the price of overalls go up? Buyers, not the sellers, were responsible. Do the rents of apartment houses on Manhattan Island yield unreasonable profits? Buyers have put up these rents by seeking in such large numbers to house themselves on that small part of the world's surface. Elsewhere buyers have leased apartments at rents which do not pay the taxes on the property. If the landlords are "profiteering" in the one case, the tenants are "profiteering" in the other. Between the year 1914 and July, 1920, according to the Aberthaw Index, the cost of constructing a standard, reënforced, concrete building rose from 100 to 265. The higher construction costs resulted in a relative scarcity of buildings, whereupon those who wanted buildings boosted the rent, much as buyers bid up the price of hay when the hay crop is poor. During the same period, owners of Ford cars, finding that they had risen in value, did not refuse to profit from a combination of causes very much like that which resulted in higher rents. As a matter of fact, buyer and seller, landlord and tenant — and everybody else, for the most part, including those who condemn "profiteers" — are all actuated by the same motives.

This procedure — cold, calculating, even cruel, as it seems to many people — is, in reality, not only defensible,

but beneficent. Variations from this attitude toward prices are exceptional, and necessarily so. Where every one obtains as much as he can honestly and lawfully obtain for his goods — giving due consideration to long-run profits — the world is likely to have the largest volume of goods to distribute, the largest social dividend. In this connection, as always in the midst of economic problems that seem perplexing, we have to remind ourselves that we cannot do a sleight-of-hand trick with prices and, like magicians, draw forth a stream of commodities out of an empty hat. The world can consume only what it produces; price can do no more than its full part in making that production large and continuous. Price cannot play that part unless it is the recognized rule that people labor and produce for as much money as they can obtain for their services and their goods. Exceptions we noted at the outset in the case of monopolies. Other exceptions there may be within very narrow limits, and some of these no doubt are coupled with high motives; but the rule remains. Mixing business and philanthropy is good for neither. The theories of price and of production here presented are consistent with the highest social ideals. There are many causes for the "high cost of living," but the fact that people, as a rule, take as much money as buyers will pay is not even one of the minor causes.

Conclusion

We must conclude that prices completely serve their economic purpose when they are a sufficient incentive to the maximum production that is continuously possible and desirable, and that they continue to be such an incentive as long as the money spent daily in consumption buys this maximum output. In other words, prices serve

their purposes when they are in the right relation to the productive capacity of the country, on the one hand, and to the money in circulation on the other hand. This relationship is maintained on a stable price-level as long as buyers are left alone to determine prices and production in free markets, and producers and distributors have sufficient knowledge of what is going on. First of all, then, we must do our utmost — which is more than any nation has ever done — to curb extreme fluctuations in the purchasing power of the dollar, for shifts in the price-level interfere with the salutary functioning of prices. Beyond that we must leave buyers as free as possible to determine by their own dollar-votes the relation of individual prices to each other; and we must furnish producers with timely information upon which to lay out production schedules. Then prices will do the utmost good they can be made to do, by bringing about the continuous production and distribution of goods on a sufficient scale, in the case of each commodity, to represent the personal desires of each of those who cast the dollar-votes.

CHAPTER XII

MONEY AS SUSPENDED PURCHASING POWER

THE superiority of money over barter as a mere matter of convenience helps to account for the vast and intricate development of the world's work;[1] but it accounts in no way whatever for the periodic interruptions of the world's work. Until we know the precise differences between trade by barter and trade by money, we cannot know precisely what features of our present economic order are due to the adoption of a medium of exchange. And until we know that, we cannot conjecture to what extent and by what methods it may be possible in the future to adapt the use of money to the interests of sustained production. Although a study of barter does not explain what goes on in modern commerce, it may help to explain what does not go on in modern commerce. It may help us to find out whether the change from a barter economy to a money economy has at times prevented, as at most times it certainly has facilitated, the exchange of goods.

For these purposes, the one meaningful characteristic of trade by barter is that the demand for goods always equals the supply of goods. This aspect of a barter economy, perhaps because it is so obvious, appears to have been overlooked entirely in the past or mentioned without apparent realization of its significance. Yet it may be that no other aspect can throw more light on the causes of business depressions. An analysis of primitive methods of exchange may illuminate our current problems if we focus our attention on the fact that, where goods are exchanged only for goods, there can be no addition to the

effective demand without an exactly equivalent addition to the supply. In other words, a barter trader cannot take anything away from the world's stock of goods without adding something which at that moment in the very process of exchange becomes an exact equivalent.

The Perfect Barter Balance of Supply and Demand

This perfect barter balance of supply and demand is illustrated by every exchange of goods for goods. Where there is no medium of exchange, a bear-skin in the hands of a trader becomes an effective economic demand only in the presence of something, a sack of corn let us say, which another trader is willing to give for the bear-skin, and which the owner of the bear-skin is willing to accept. If a man has a sick horse, for which nobody is willing to give anything, the horse is a zero quantity both as supply and as demand. As soon as the horse recovers to such an extent that a trader is willing to give a certain goat for it, and the owner trades the horse for the goat, the horse adds to the market a demand exactly equivalent to the value of that goat and a supply measured also by the value of the goat. In such trading the measure of the demand *is* the supply. Demand and supply are one and the same thing, looked at from different view points. There is accordingly an exact and inevitable balance. The transactions are virtually all "spot"; the barter trader who parts with his bear-skin demands and receives at once a sack of corn. The transaction is over. There is no aftermath of suspended purchasing power left hanging over all future transactions, to be used nobody knows *when*, or *where* or *for what goods*.

But when a bear-skin is sold for money, this money may or may not be used to purchase a sack of corn. The exchange of goods is interrupted; indeed, it may never

take place. For money is suspended purchasing power. For that reason, the sale of a bear-skin for money at once gives rise to the new possibility of a demand without supply or a supply without demand.

This is a consequence of the use of money which many writers do not take into account: they reason as though all sales were still barter transactions and all exchanges were immediately effected. They adjure us to "think in terms of goods." "Trade, after all," says one of our bank presidents, "is but a perfected system of barter, in which money serves as a term of comparison."[2] Bilgram and Levy tell us that "recourse has long been had to a process of complex barter through some medium of exchange," but "the final outcome is nothing more than the exchange of goods for goods."[3] Lettice Fisher agrees. "All trade," she says, "is, of course, barter."[4] "What always ultimately takes place," says Sir Lancelot Hare, "is the exchange of goods or services for goods or services."[5] "Trade is still barter," adds George W. Gough, "and the young economist must do exactly as Solomon and Hiram did — think in goods."[6] The trouble is that if he thinks only in goods, he entirely overlooks the unbalancing of supply and demand that money makes possible.

It is misleading to consider the exchange of goods for money as only half a transaction. It is, in every case, a completed transaction. Money is final payment. Money does not, as MacLeod and others have said, represent the indebtedness of society at large. There is no obligation on the part of society or of any individual to give anything in particular for money. The receiver of the money takes his chances. Sometimes these chances are negligible and are so considered. At other times, the exchange value of money is so uncertain that many traders refuse to accept

it at all. But at all times, when money is accepted for goods or for services, the exchange is completed.

Thinking of modern trade as though it were barter trade is so misleading and yet so widely recommended that it will pay us to consider other expressions of this orthodox view. "There is always a demand for this additional product," says one writer, "because the addition to society's income enables society to pay the additional workers or machines or organizers. . . . What we call 'Supply' and 'Demand' are the same things looked at from the different standpoints of consumer and producer."[7] "Supply and Demand," says another writer, "are only phases of the same economic conditions and it is hardly conceivable that they can ever be anything but equal."[8] All this, as we have pointed out, is true in a barter economy. All this would be true to-day, if each worker took to market with him as his "demand" exactly what he had produced, nothing more and nothing less. In other words, it would be true of a money economy if the demand which daily reached the markets in dollars were precisely the same and remained the same as the supply of goods, reckoned in dollars at the current prices, which daily reached the same markets. But rarely does this happen.

The Unbalancing of Supply and Demand in Modern Markets

A similar error appears to be involved in the following statement from the monthly letter of a New York bank: "It cannot be too strongly emphasized that there is no other market for products, and no way by which any group can buy the products of others but by selling its own."[9] Again, this is true of barter markets. But, for reasons set forth in the tenth chapter, it is not true of modern markets in any given year; and a year, let us re-

peat, is time enough in which to bring on a business crisis. Even in the long run, it is not strictly true, for it does not take account of purchasing power which speculators and governments offer for goods, without bringing to the markets a corresponding supply of goods. Nor does it take account of purchasing power created, in the form of bank credit, for the express purpose of enabling an owner of goods to withhold them from the market.

"Credit," says Oswald St. Clair, "has not directly affected prices simply because it has expanded with the expansion of the transactions which gave rise to it and upon which it is based."[10] The same idea underlies the entire volume by Percy and Albert Wallis. "Any increase of this balance [of bank deposits]," they assert, "means an increase in the total goods and services to the credit of the community, but does not raise the price of those goods or services in any way. . . . As the extent of such credit depends strictly upon the value of the goods passed on to the social capital, it is not obvious that bankers can extend or contract such credit or inflate the currency by an increase of deposits."[11] Now, unfortunately, the credit created does not depend *strictly* upon the value of the goods. Always it depends on somebody's judgment of probable future value. Sometimes, indeed, it depends upon the problematical and merely estimated value of goods which may or may not be transferred or even produced." "The actual transfer of goods," says Professor Laughlin, "is the essential part of the credit operation."[12] Clearly, it is the essential part of a barter transaction; but the essential part of a credit operation is the transfer of purchasing power.

Nevertheless, our banking system is predicated on the conviction that there can be no inflation as long as the "gold standard" is maintained and the volume of money

is increased in response to what are regarded as the legitimate needs of business. "As long as Federal Reserve notes are redeemable in gold," said the Chairman of the Federal Reserve Board, "and the required reserves are maintained, it is difficult to see how there can be any inflation of the currency growing out of the issue of Federal Reserve Notes."[13] Not to present these quotations at needless length, we may close the list with the following admirable statement of the accepted doctrine: "As long as reserve balances are created and circulation is issued only against self-liquidating paper, which represents things in course of production, and as long as this process is kept within a safe relation to gold, there may be more or less acute banking expansion, but there would not be any cause to call it inflation." It is true that issues of money against what is called self-liquidating paper need cause no inflation, if by that term we mean an expansion of money that results in an abandoned gold standard and depreciated paper money. But inflation, thus defined, is not the only issue in the United States. As we observed in previous chapters, it is increases in the volume of gold-supported money accompanied by a rising price-level with which we are immediately concerned. And this condition usually results if new issues of Federal Reserve notes are based on imports of gold, unaccompanied by a corresponding increase at the same time of goods already in the home markets.

Underlying all these statements of orthodox economic theory is the assumption that there is an exact correspondence, dollar for dollar, between the goods produced and the credit created, and the further assumption that the new goods and the new credit affect the market at the same time. Both assumptions would hold good if pecuniary markets did not differ from barter markets:

neither is warranted with respect to the markets of today. In the United States, the danger of inflation on a gold basis is imminent; and there is nothing to prevent it in the requirements for so-called self-liquidating paper as a basis for bank loans.

We have observed that the volume of bank deposits created in connection with current business does not depend strictly upon the known value of the goods produced, but upon somebody's estimate of future value. Let us see what this involves. When anything is used as a medium of exchange, it thereby becomes a measure of value; but the use of anything as a measure of value of goods that are *not* exchanged may lead to no end of business troubles. If a ton of pig-iron, for example, sells for thirty-four dollars, the exchange value of that ton of pig-iron at the time of sale is thirty-four dollars. Are we safe in assuming that all pig-iron has the same exchange value? It would seem so; and the business of the world, for the most part, proceeds on that assumption. But we have no accurate measure of the value of any commodity except at the moment when money is used as a medium for transferring the ownership of that commodity. The price at which one ton of pig-iron is sold is not a measure of the exchange value of any other tons of pig-iron. Their value can be discovered only in the process of sale. Similarly, the fact that 10,000 shares of Studebaker common stock sell on a given day at 131 does not indicate the exchange value of the other 590,000 shares. Far from it. Nobody knows what 100,000 shares would bring, if they were sold at market the next day; yet that is the only way to find out their exchange value. What we do know with certainty is that if extraordinary offerings of commodities, or common stocks, or pieces of real estate are thrown upon the market at one time, there is a sudden fall in prices.

Yet, for the daily purposes of business and banking, if certain tons, or shares, or acres sell at a given price, we are inclined to "value" all other units accordingly. Our major economic troubles are due in part to this fact. In the domain of commerce and finance, when deciding the loan values of securities and especially of commodities as a basis for increasing the volume of bank credit, we often proceed on the calm assurance that the price at which a given unit of anything is actually sold is the price at which all other like units would sell.

The Three Options that go with Money

When, in our modern markets, the trader receives money instead of corn for his bear-skin, or when the manufacturer receives bank credit against watches in the course of production, he acquires freedom of choice concerning the *time* and the *place* where he will spend the money, and concerning the *goods* he will accept for his money.

The man with money has freedom of choice with respect to the *time* of spending it. He may withhold it from circulation as long as he pleases; at least he may withhold that part of his accumulation which he does not need to pay taxes and to keep him alive. When the price-level is falling, the owner of money has a special reason for holding it: during the twenty years preceding 1896, everybody who refrained from spending money gained because of the increase in the purchasing power of money. When the price-level is rising, the owner of money has a special reason for getting rid of it: in Central Europe, following the World War, it was profitable to spend money for almost any goods rather than to retain the money, for nearly all goods were appreciating in money-value, while money was depreciating in goods-value. But apart from

this special risk of withholding money when prices are rising, the risk of withholding money is negligible, since money is exchangeable for all commodities and all services at all times, and will, therefore, be accepted in unlimited quantities as long as its acceptance by others is not questioned.

The owner of commodities, on the other hand, has less freedom of choice with respect to the *time* of passing them on. The favorite illustration, since Jevons first used it, has been the experience of Mademoiselle Zelie, a singer of the Théâtre Lyrique at Paris, who, in the course of a professional tour around the world, was at a loss to know what to do with her remuneration for a concert in the Society Islands. By contract, she was to receive one third of the receipts.[14] When her share was counted, it was found to consist of three pigs, twenty-three turkeys, forty-four chickens, five thousand cocoanuts, besides considerable quantities of bananas, lemons, and oranges. In Paris, as the prima donna remarked, this amount of live stock and vegetables might have brought four thousand francs, which would have been ample remuneration for five songs. In the Society Islands, however, barter prevailed; and, as Mademoiselle could not herself consume or deposit with her Paris bankers any considerable part of the receipts, it soon became necessary to feed the pigs and poultry with the fruit and vegetables.

Under a system of barter, purchasing power can be withheld *only* in the form of commodities — sugar, wool, eggs, lumber, raspberries, hats, and the like. The possibilities of profitably keeping this kind of purchasing power out of the market are rigidly limited, for four reasons: (1) Most commodities spoil as money does not; (2) as most commodities are bulky, handling, storage, and insurance expenses may eat up the profits which might

otherwise result from holding the commodities for later markets; (3) there are depreciation risks due to changing needs, customs, fashions, boycotts, tariffs, weather, and means of transportation, which do not trouble the holder of money; (4) there is the risk (connected with those above-mentioned) that stored-up commodities could not be disposed of to advantage at the time when the owner might be obliged to dispose of them.

It is on account of a medium of exchange, therefore, that buyers now have a wide range of choice with respect to the time of using stored-up purchasing power. This is a factor that money has introduced into business, and one that must be measured and reckoned with.

When this time-factor is taken fully into account, money, far from obscuring the true nature of modern trade, may clarify it as nothing else can. Let us consider, for example, what must occur in the markets if any considerable number of traders decide that, for the time being, they do not care to be parties either to barter transactions or to the exchange of commodities by means of money; decide to dispose of all the commodities they can sell for money and keep the money; decide, in other words, that it is a good time to sell but a poor time to buy. In that case, they desire to use money for the time being solely as a store of purchasing power, not to use it as a medium of exchange. As much money as they receive in payment for commodities, and retain for future use, is thereby for the time being withdrawn from the volume of money used to exchange commodities. As far as current trade is concerned, that money might just as well have been seized by Captain Kidd and buried in a desert island. Thus money has introduced into business transactions a time-factor of far-reaching consequences. Indeed, as we shall see later on, this time-factor every few

years has a part in threatening to put an end to all transactions, and business is at its wit's end to find out how to get under way again.

Money always defers the Exchange of Goods

This is the gist of the matter: money is always a means of deferring and sometimes a means of defeating the completion of an exchange of goods for goods. The time elapsing may be only a minute or two, as when a farmer sells eggs at one stall in a market and immediately spends the proceeds for beef at the next stall; or the time elapsing may be eternity, as when the money is received for goods and then lost or destroyed. Between those two extremes are an infinite number of possibilities. In other words, money is always a means of deferring repayment of goods with goods, which repayment, under a barter economy, is never deferred. When we barter a load of hay for a harness, we effect an exchange of goods for goods; but when we sell the hay for money, we stop there. How long do we stop? That apparently innocent question is like the bloody questions of Macbeth to Banquo. Upon it may hang the tragedy of a business crisis. For when many people at the same time decide to stop long, or decide suddenly to release the purchasing power they have stored up in the form of money, there are changes in the relation of supply of goods and demand for goods with consequences to business of great importance.

When men who have withheld money decide to spend it, they may offer it in markets which lack a corresponding increase of commodities, since the very fact that the money has been withheld may have caused a curtailing of production; and it takes time before new commodities appear in response to new effective demand. The price-level, therefore, may be suddenly changed. On the other

hand, there is the extremely important consideration that, no matter how large stores of commodities may be or how long withheld, they are still stores of commodities. Whenever the withholder of commodities does come into the market, he comes in with commodities. A dealer might barter his corn for skins, with the idea of holding the skins for speculative gains; but he could realize on the transaction only by putting the skins on the market. He might thus reduce the exchange value of skins, but only by proportionately raising the exchange value of other commodities. The importance of this distinction will appear in connection with any adequate discussion of business cycles.

Yet, oddly enough, that distinction has long been overlooked. It appears that early in the history of human relations, men became so accustomed to taking money for goods and keeping the money as long as they pleased, that they failed to perceive the importance of the time-factor; just as they saw untold millions of nuts fall to the ground before any one induced from so common an experience the law of gravitation. It is the neglect of this time-factor that makes the classical argument unsound. When we simplify our thinking in the approved way, in order to see beneath what writers have long called "the money surface of things," we think of commerce only as the exchange of *present* goods against *present* goods. But that is barter, pure and simple. The moment money is thrust in between the two commodity-ends of the transaction, we must think of commerce as it always is, namely, either the exchange of goods for money and the *subsequent* exchange of that money by somebody for goods, or the exchange of goods for money followed by the extinguishing of the money. Is the exchange of goods ever completed? If so, how much time elapses between

the two transactions? Those crucial questions we overlook whenever, following traditional economic precept, we attempt to explain current commerce by reverting to the simple barter trade which, within the United States at least, has been all but abandoned.

The Goods Option that goes with Money

The owner of money has freedom not only with respect to time, but also with respect to the *goods* he will buy. The owner of wheat may sell wherever there is a buyer of wheat, and the buyer may buy wherever there is a seller of wheat. In this respect, the buyer of wheat and the seller of wheat have ranges of choice which would be balanced in the long run, were it not for the further fact that the buyer, by virtue of holding money, has the additional choice of not buying wheat at all, but buying a substitute; whereas the seller must sell wheat to somebody, sometime. The holder of diamonds, phonographs, furs, or other commodities which the buyer may classify as non-essentials, is at a further disadvantage, since the holder of money need not even seek a substitute. He may refrain from buying non-essentials of any kind. In 1920 and 1921, the disadvantages of holders of goods became painfully obvious to everybody who had stocks on hand of piano-players, ornaments, or even such essentials as leather, copper, wool, and cotton.

The holder of money has choices among many goods. He may use his money to buy a coat of the latest style (new consumers' goods); or he may order a tractor (new capital goods); or he may invest in rare books (old consumers' goods); or, finally, he may buy a factory (old capital goods). Under a barter economy, on the other hand, with its inefficiency and waste, there could not be the large investments we have to-day; nor could there be the

sudden changes in the relative amounts invested in these four classes of goods, for there could be neither the vast stock of goods nor the vast stock of mobile purchasing power that has resulted from the efficient, large-scale production of a money economy.

The Place Option that goes with Money

This freedom of choice with respect to the kind of goods the holder of money may buy is enlarged by the greater geographical range of his markets: he is not confined to the choice available in the *place* where he wishes to dispose of his goods and in the places to which he can transport them with the hope of trading. Without leaving his ranch at Sheridan, Wyoming, he may sell his cattle and exchange the proceeds for a box of oranges in Florida, an automobile in Detroit, and a thousand other commodities that a mail order house in Chicago will collect for him from distant producers who never heard of him, or of his cattle, or of Sheridan, Wyoming. He may spend his money locally, nationally or internationally, by mail, telegraph, or cable, wherever a system of money exchange is in working order. This geographical range of choice of the holder of money is of fundamental importance.

Under a barter economy, on the other hand, the owner of goods would find his markets restricted geographically. The barter trader could not suddenly affect his local markets by offering his goods in foreign markets. For many months following the World War, for example, the surplus wheat in Southern Russia could not find its way to outside markets, or even to other parts of Russia, because the Russian monetary system had broken down and barter was the only means of exchange. Though barter traders could carry goods to distant ports, as New England sea captains did a century ago, and take their

chances in each port, the time involved would be so great, and the volume of goods thus risked would be so small, that the disturbance in prices and production caused by such cumbersome trade would be comparatively slight. Under a barter economy, a dealer could not ship skins from Chicago to Bordeaux and, before the skins had left the freight yards, obtain payment in gloves at Chicago. Yet this is typical of the transactions that money and bank credit have made everyday occurrences.

Indeed, it is of the utmost consequences to the whole economic order, as we shall see in some detail later on, in what directions the holders of money exercise this freedom of choice at any one time; for a marked change in the relative amounts of purchasing power devoted to the four classes of goods enumerated above, or a marked change in the relative amounts devoted to commodities and to services, causes changes in prices, in wages, in profits, and in volume of production, often with the familiar train of consequences suffered in periods of depression.

We may note, finally, that the change from a barter economy to a simple money economy, thousands of years ago, did not at once inflict upon society the problems that, from the beginning, were inherent in the use of a medium of exchange. It was natural that for many centuries men should think only of the conveniences of money. Not until the development, during the past century, of a highly complicated industrial and financial organization, was it possible for the use of money as suspended purchasing power to have a part in causing economic disturbances on a large scale.

Summary

Because of these three choices, as to *time* and *goods* and

place, which go with money, the individual as a buyer is almost always in a strategic position. The individual as a seller ordinarily is not, for he has but one choice — namely, to sell for whatever price the buyer decides to pay for his goods, or keep the goods. There are alternations, to be sure, between what we call "buyers' markets" and "sellers' markets." During the World War, the man who had hides to sell was in a fortunate position, for people were prepared to buy, at current prices, more hides than there were in existence. It was a "sellers' market." In April, 1921, it seemed as though nobody wanted to buy hides at any price. Certain grades were eighty-one per cent below the highest price of 1919. It was a "buyers' market." There are fluctuations of this sort that affect the degree of the advantage of the buyer over the seller; but in all markets the advantage persists — and it persists by virtue of the three choices that go with the buyer's money. The owner of money, therefore, as the holder of such a convenient store of suspended purchasing power, virtually controls the production schedules of the world; and, in the very process of exercising this control — the spending of his money — he determines for the most part the prices at which goods are sold. For this reason, studies of the ups and downs of business may well begin with changes in the volume and distribution of purchasing power relative to changes in available goods. To that subject we shall now turn.

CHAPTER XIII

MONEY IN RELATION TO GOODS

THE perfect balance between the supply of goods and the demand for goods that prevails in barter markets may be upset, as we have just observed, by the introduction of a medium of exchange. The fact that money is suspended purchasing power — that it always defers the exchange of goods for goods — is alone sufficient at any time to bring about some disturbance of the balance of supply and demand, regardless of changes in the quantity of money in circulation.

Money introduces a further possibility of market disturbance; for money, unlike any of the goods that are used in barter exchange, can be increased suddenly and at the will of governments, and without any reference whatever to changes in the supply side of the equation. Every country that has adopted any form of money has experienced, sooner or later, an increase in the volume of money which has had no necessary relation to changes in the quantity of goods on hand, or to movements of the price-level, or to the rate of increase of production of goods, or to the time of the appearance of the goods on the markets, or to changes in the relative amounts of money used for the purchase of finished goods and for other purposes. In short, the volume of money often changes without reference to changes in the volume of the work to be performed by money: demand changes regardless of supply.

Production of Money surpasses Production of Goods

Such an experience has recently thrown the markets

of the United States into confusion. For many years, according to the independent studies of Messrs. Day, King, Snyder, and Stewart, the increase in the physical volume of production in the United States averaged not far from 4 per cent per annum.[1] During the War, the rate increased. In 1918, the volume of production was estimated as 25 per cent greater than in 1914. In 1919, however, there was a slump: production fell off until the volume was not more than 14 per cent in excess of the volume for 1914. During these years, the increases in money and bank credit were far greater. More than a billion dollars in gold came from Europe; and the Federal Reserve System allowed this gold to serve as a basis for more than twice as much bank credit as would have been allowed under the old national banking system. It seems that the new system enabled every gold dollar to support at least seven dollars of bank credit.[2] From June, 1914, to June, 1919, the increase in the estimated volume of money, outside the Treasury and the banks, was nearly 120 per cent. From January 1, 1915, to January 1, 1920, according to the data compiled by the Federal Reserve Bank of New York, the currency in circulation, outside the Treasury and the Federal Reserve Banks, increased about 62 per cent and deposits in National Banks increased about 119 per cent. How commodity prices soared during this period of money expansion, while the rate of increased production varied but little, is shown in Figure 11.[3] One of our bank economists says that "in the latter part of 1919 and the early part of 1920, we were carrying full sail and throwing out all possible additional canvas, driving ahead under what seemed to be favorable winds, and largely oblivious that a hurricane was impending." Evidently we were counting on inflation of the currency to fill out the sails and keep the ship going,

but we were producing smaller cargoes than in 1918. From all these facts, it is evident that there was a wide discrepancy between the production of goods and the production of money.

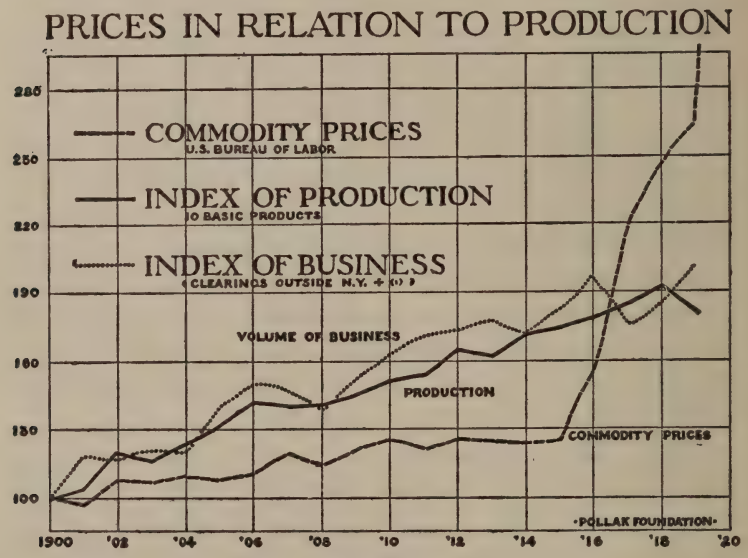

FIGURE 11

It is not easy to discover precisely how, and under what circumstances, and to what extent money upsets the balance of supply of goods and demand for goods. It is easy to see that if the United States Government had suddenly thrown upon the markets all the wool it had accumulated during the War, it would thereby suddenly have changed the relation of supply and demand, to the consternation of wool growers and the temporary confusion of markets. It is as readily understood that if the Government could to-morrow miraculously double the number of automobiles in the hands of dealers, it could thus upset the existing balance of supply and demand.

It is more difficult to comprehend the unbalancing that comes from changes in the demand side of the ratio. Ordinarily, no government can suddenly double the supply of wool or automobiles or any other commodity; but any government can easily double the money in circulation and thus create a demand, *at prevailing prices*, for more goods than there are in the whole country. Ever since the invention of the printing press it has been easy to make sudden increases in the volume of paper money that passes from hand to hand.

Inflation by Means of Bank Credit

It is easier still, in the United States, to bring about inflation by means of bank credit. When the banks in New York, on September 15, 1920, loaned the United States Government $200,000,000 by writing that amount in their books, the total bank deposits of the country were increased by that amount, except in so far as any part of it was used to cancel old obligations. The result was increased dollar-demand for goods but no increase of goods. The amount spent by the Government went presently into other banks and thence to other uses; and it had the same effect as printed money. If the Government had inflated the currency, as it did following the Civil War, by printing money in the form of greenbacks, and had paid them out directly for war materials, many people would have seen at once that the quickest way to restore the old relation of supply of goods to demand expressed in dollars would be to take this excess of paper money permanently out of circulation. When, however, money is inflated by the simple, and to most people obscure, method of writing credits on the books of banks, not one person in a hundred knows what has happened. And some of those who go so far as to observe the growth

in the volume of bank deposits regard this growth as evidence of national prosperity.

The creation and extinction of *bank credit* is constantly changing the relation between the number of dollars offered in the markets at a given time and the amount of goods available for the dollars at that time. These changes come about in various ways, and they occur whether or not the Government at the same time makes any changes in the character or volume of *currency*. If, for example, any holder of goods offers the goods as security for a loan and is given bank credit, new purchasing power is created without necessarily placing new goods on the market. In fact, the borrower may seek the loan for the purpose of temporarily keeping goods off the market. Many loans made in 1921 to holders of farm products, leather, copper and cotton were made to enable the owners to retain their goods for higher prices. Purchases made with the proceeds of such loans did not "mean prior sales"; quite the contrary. To the extent of such loans, therefore, the balance between the volume of goods on the market and the volume of purchasing power was disturbed — an impossibility in a barter market. No such disturbance occurs when the borrower finances his enterprise by the sale of bonds which are purchased out of savings, or by placing a mortgage with a savings bank; for, in such cases, the money is merely diverted from certain uses to other uses, while the total volume remains unchanged. But new commercial bank loans, even when based on a small proportion of the nation's total wealth, may mean large increases in the volume of circulating purchasing power, and, therefore, may mean large changes in the ratio of supply and demand; for, if the total wealth of the United States is $300,000,000,000, while the total money in circulation

is $30,000,000,000, new loans equal to one per cent of the wealth would mean a ten per cent increase in money.

Even greater than this are the possibilities of inflation, for most bank loans are not secured by mortgages, that is to say, by a physical volume of goods. The goods themselves, usually, are not pledged by the borrower, unless — as in the case of the Goodyear Tire and Rubber Company in 1921 — the credit of the borrower is questioned. Ordinarily, credit is extended by the banks on the general reputation of the borrower. It is commonly said, "That man is good for any amount of credit he asks for, because he will not ask for larger loans than he can repay." In 1920, national bank loans, unsecured by collateral, reached a total in excess of seven billion dollars. Thus, reputation or the mere possession of wealth, when bank credit is expansible, sometimes enables a man to increase his purchasing power, and to use it in various directions, without giving up any of his property or even specifically pledging any part of it.

Bank credit is also created in vast amounts merely on the *expectation* that goods will be produced. Indeed, this is the chief use of bank credit: it enables manufacturers to pay for labor and materials before there are any finished goods to pledge as security. The goods may never be produced or may be unsalable when produced, but the credit goes on circulating as a part of the increased currency of the country, until the loan is paid in some way and the amount of credit in question is thereby cleaned off the books of the bank. It is true that if the borrower does not succeed, according to expectation, in paying his debts at the bank with the proceeds of the sale of his goods, eventually he must produce and sell other goods, or in some way obtain the necessary funds. But, meantime, the balance between money and goods has been

disturbed precisely to the extent of the money that was borrowed and placed in circulation. Time is the essence of the problem, and time is one of the factors in the exchange of goods for goods which we must charge to the account of money.

Rarely is increased bank credit that is used for consumers' goods exactly offset by increased production of consumers' goods at the current price-level. Even in those rare cases, the ratio of money and goods is ultimately disturbed unless production continues at the higher rate; or the new money is withdrawn from circulation; for the original volume of goods is consumed, while the credit may continue to circulate as a demand for more goods.

Inflation due to Government Financing after the War

This ability to create credits, through the issue of Government obligations in exchange with the banks for current purchasing power, enabled the United States Government to disturb the balance of supply of goods and demand expressed in dollars by increasing its expenditures on a scale that might otherwise have been impossible. Fully a year and a half after the armistice, the Government was spending money at the rate of about seven billion dollars a year. In 1921, the Government was still spending four or five times as much as it spent before the War. The continuation of vast expenditures on the navy and on the building of ships continued to keep labor and materials away from other fields. Had the Government been obliged to obtain all the funds for these expenditures directly from the savings of the people, instead of partly through inflation of bank credit, the relation of supply to demand expressed in dollars would not have been disturbed by Government financing; for the

increase in effective Government demand might have been offset by the decrease in effective taxpayers' demand.

Our railroad difficulties following the War were also due in part to expansion of bank credit for Government uses. Economic maladjustments occur wherever there is interference with supply and demand, as there is whenever there are sudden changes in the relations of costs and prices to each other. When these maladjustments occur in an industry such as transportation, which affects all others, the whole economic process of production, distribution, and consumption gets out of equilibrium. This was what happened when the Government took charge of the railroads and maintained rates that did not pay the cost of operation. On account of this policy, the railroads were called upon to handle more passengers and goods, at the established rates, than they would have been called upon to handle at rates which paid operating expenses. Thus, the difficulties of traffic were aggravated. It is not likely that the Government would have paid the deficits, and thus maintained this economically unsound condition, without the inflation of bank credit; for it is not likely that the Government would have asked all the people to pay direct taxes in order to maintain railroad wages at a level which seemed to most of the voters inordinately high. Thus the railroad troubles of 1921 and 1922 were in no small measure due to the inflated bank credit of previous years.

Inflation a Cause of Unbalanced Foreign Trade

It was credit extended, directly or indirectly, to European countries, by banks in the United States, that made possible the unbalanced foreign trade in the years following the armistice when, with the greater part of the

world indebted to us, we were still exporting more goods than we were importing. Even in the latter part of 1920 there was an increase in the trade balance, with a consequent increase at home in the difficulties of "returning to normal" or "restoring our economic equilibrium." Under a barter economy our exports, so far as there were any, would have been paid for in goods. There could not have been the long-continued abnormality of a creditor country having a vast export balance, without a vast increase of tangible goods owned abroad.

During 1919 and 1920, at the same time that we were sending out of the country far more goods than we were bringing in, we were exporting gold. During those two years our exports of gold were nearly half a billion dollars in excess of our imports of gold. According to the traditional view, it was impossible for a creditor country to continue, year after year, to have exports far in excess of imports without, at the same time, gaining gold or increasing its ownership of capital goods abroad. It was only the extension of bank credit to Europe, in unprecedented totals, that made this condition possible. As Europe had insufficient goods with which to pay her bills, and as other countries did not take over Europe's debt to us, we could not use our credits with Europe to pay our debts to the rest of the world. We were obliged, therefore, to pay with gold for our imports from non-European countries in excess of our exports to those countries. Such unbalanced trade relations could not have persisted without expansible bank credit.

During the years 1919 and 1920, on account of our extension of credits to Europe, we lost commodities, but continued to increase our bank credit. This further disturbed the relation of volume of money at home to volume of commodities at home, and thus stood in the way of

restoring lower prices and economic equilibrium at home. If this appears too obvious to be worth mentioning, it may be added that it was in the midst of these economic difficulties and high prices, due in no small measure to credits already extended to Europe, that Congress passed resolutions for the avowed purpose of extending more credits of the same sort to Europe in order to reduce the high cost of living at home. Speaking in favor of reviving the War Finance Corporation, several members of Congress said, in substance, that we ought to extend credits freely to foreign countries in order to enable them to buy from us, at prevailing prices, products in some of which they could undersell us in our own markets. At the same time a majority of the members of Congress appeared to favor tariffs that would prevent foreign countries from repaying these loans with any of their products, although this was the only large means that the greater part of Europe had of sending payments to this country. That suggests the dilemma of the reparations: all the Allied nations were agreed that Germany could pay the indemnities only with goods; all the Allied nations were agreed that they did not want German goods. The United States can furnish abundant proof, out of its own costly experience, that a combined protective tariff and credit-extension policy, which sends commodities abroad and shuts out foreign commodities, cannot reduce the cost of living at home. It has exactly the opposite effect.

Demand for Goods not satisfied by Expansion of Bank Credit

At the close of the War, since commodities were scarce, dealers were asking for bank credit with which to buy supplies to meet what appeared to be increased demands. There was no doubt about the need for commodities. The supply was deficient because the War had destroyed

commodities and at the same time interfered with peace-time industries. The call for increased bank credit came in part from men engaged in what is ordinarily called "necessary business." They regarded themselves as entitled to bank credit, as they wanted it for the purpose of satisfying what we had come to regard as "legitimate" needs. The trouble was that, in the extraordinary condition of the markets immediately following the War, it was not possible at once to supply even what had come to be regarded as an ordinary demand. Whenever such a condition exists, as it did in virtually all the world following the War, the desire for bank credit cannot be satisfied by creating new bank credit. The demand is insatiable. It defeats itself by lifting the price-level. "Cheaper money" is not a remedy; it is a dangerous stimulant. It makes the malady worse and the recovery more difficult. The only way to satisfy the demand for more commodities, at the old price-level, is to produce commodities in proportion to the increased money, until the former balance of supply of commodities and demand in dollars is restored. The increase in bank credit might be rendered harmless if there were a corresponding increase in idle cash balances — idle from the standpoint of the whole community. But when prices are rising, bank balances are least likely to lie idle. In other words, newly created bank credit goes into circulation most promptly precisely when the total volume is expanding most rapidly. For, at such times, it is profitable to turn it quickly into commodities which are appreciating in value, while the money itself is depreciating in value.

All these maladjustments of demand and supply are monetary phenomena. Under a barter economy, such discrepancies between changes in supply and changes in demand would be impossible: there could be neither

"inflation of the currency" nor a "dearth of currency," since there would be no currency. In other words, the total volume of marketable goods offered for sale and the total volume of purchasing power — the supply and the demand — would be one and the same thing.

Fallacies concerning Relation of Money and Goods

Before we pass over this attribute of a money economy, as too obvious to be worth mentioning, we should note that economists as well as governments have failed frequently to take it into account. Even some of the world's most noted economists appear to have overlooked the fact that the perfect barter balancing of supply and demand is upset, under all monetary systems, by changes in the volume of money that have no necessary relation to changes in the volume of goods. What this traditional failure leads to is shown by such statements as the following from the distinguished French economist, Charles Gide: "In our everyday life we are too apt to imagine that sale and purchase are independent and self-sufficient processes. That is a mistake. Every purchase means a prior sale; for before being able to exchange money for goods we must previously have exchanged goods for money. Inversely, every sale points to a future purchase."[4] This is doubly false: not every purchase means a prior sale, and not every sale points to a future purchase: for, as we have just observed, purchases may be made with paper money just created by act of Congress; and money received from the sale of commodities may be retired from circulation by act of Congress. Or, as in the cases cited above, purchasing power may be obtained, not from sales, but from the expansion of bank credit; and money obtained from sales may be used, not for the purchase of commodities, but for the repayment of bank

loans and the consequent reduction of the volume of bank credit. It is only in barter trading that sale and purchase cannot be independent and self-sufficient processes.

Yet this doubly false explanation of money, in its relation to sales and purchases, continues to appear in the most reputable of treatises as if it were a fundamental characteristic of all monetary transactions of modern times. In *The Functions of Money*, published in London in 1921, William F. Spalding says: "It is true, as the French economist, Professor Gide remarks, that each purchase must have necessitated a previous sale, that is, when exchanging commodities for the money substance, since prior to exchanging money for goods, there must have been first an exchange of goods for money. On the other hand, every sale presupposes a purchase for the future, for the very simple reason that if we exchange commodities for money we do so in the belief that later on we shall be able to exchange this thing called 'money' for other commodities. Nevertheless, in every case the two operations form a complete entity." [5] Here we have the old explanation offered again in its pristine simplicity, as if the world had not yet learned how to use bank credit or even the printing-press. Most emphatically the two operations do not form a complete entity.

These quotations are typical of the fallacies which some men fall into because of their unthinking repetition of statements that were first made of a radically different monetary world, because of their habit of applying to our own day conclusions drawn from days of barter trading, and because of their assumption that the use of money is only a superficial phenomenon. Perhaps no error is more likely to obscure the most serious of our current economic problems. Indeed, if this traditional explanation of mon-

etary transactions were sound, no explanation whatever would be possible of the rise in prices from 1914 to 1920. It simply could not have happened, for there would not have been enough dollar-demand to carry the prices so high. To assert that every purchase means a prior sale and that every sale points to a future purchase, is to divert attention from one of the most profitable of all fields of study concerning commercial "booms" and "panics."

CHAPTER XIV

MONEY AND SPECULATION

It is no part of our purpose to discuss here the various good and ill effects of speculative dealings in general which are discussed at length in the textbooks.[1] We shall go no further into this extensive subject than to note some of the ways in which fluctuations in the volume of money and in the price-level accentuate the evils, without increasing the benefits, of speculation. In all that we say, therefore, we are concerned, not with those speculative aspects of trade which are inherent in all transactions, even on a stable price-level, but with those activities in commodity markets which are due primarily to changing price-levels.

In a period of rising prices, the growth of speculation, particularly in the United States, is facilitated by expansible bank credit. Without its aid, extensive speculation in a wide range of commodities would be impossible. When speculative buying slows down, it is accompanied by the complaint of speculators that the banks will not let them have "any money to do business with." The speculative buying which took place in this country during 1919 could not have occurred under a barter economy; nor could it have occurred under a monetary system which permitted increases of money and bank credit only in proportion to the rate of increase in production or in volume of trade. The unprecedented increase in bank loans (shown in Figure 12)[2] enabled many speculative middlemen, of no economic advantage to the community, to thrust themselves into the processes of distribution and retard the flow of goods.

The rapid rise in prices, which, as we have seen, was possible in this country only with inflation of the currency, was an incentive to speculation in commodities. Rising prices, as we have just observed, made "profit-

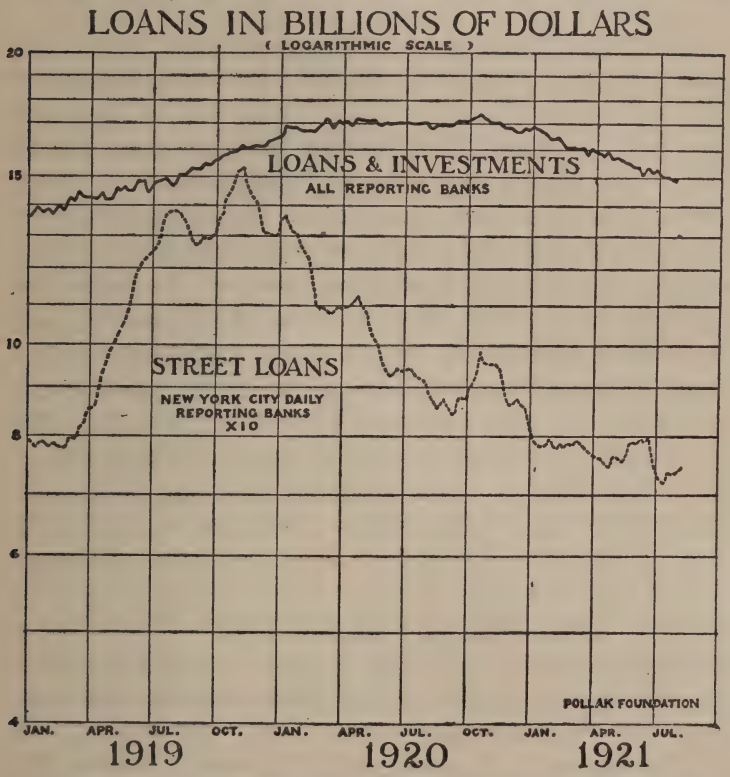

FIGURE 12. LOANS OF ALL REPORTING BANKS COMPARED WITH STREET LOANS, 1919–1921

eers": the "profiteers" did not initiate the rise in prices. The speculation itself involved demands for credit expansion. So far as the new credit was used outside of speculative channels, it tended still further to increase prices by adding to the dollars available for goods. So far as this

new credit was used to withhold goods from the market, it tended to increase prices by decreasing the volume of goods available for the dollars. Higher prices became incentives to further speculation, and so on up the ascending spiral.

The dangerous level to which prices were thus driven was evident to everybody in the case of sugar — after the crash came. American speculators bought sugar not only in Egypt and Sweden and Bolivia, but even in Kwantung, Czecho-Slovakia, and thirty-five other countries. In the scramble of speculators, including many men who had never dealt in sugar, to make money on a rising market, the ordinary consumers' demand for sugar was ignored. As a result, the markets of the world were thrown out of balance. Sugar, which had been shipped from the United States to England at a price, was brought back to be sold at home at a higher price. The apparent shortage of sugar in the United States was due in part to the withholding of sugar from the market, as became clear when the break in prices revealed the surplus supply on hand and on the way from other countries. In 1921, after the market price of sugar had dropped to five and one-half cents, men were paying twenty-four cents a pound for sugar ordered the previous year. In July, 1920, the price of sugar in the United States was the highest in the world: six months later it was the lowest in the world (except in Germany and Czecho-Slovakia, where the price was arbitrarily fixed by the Government). This single instance shows how the distribution of a staple commodity can be interfered with throughout the world, to the loss of everybody except a few of the speculators, when the bank credit of a single country is sufficiently elastic to provide speculators with "plenty of money to do business with."

Although speculation has taken place under a barter economy, it has been, necessarily, on a small scale, and never in many commodities at one time, partly because of the slow, cumbersome, and risky nature of barter transactions, but more particularly because the chief incentive to widespread speculation — namely, a large and sudden increase in the general price-level — is lacking under a system of exchange which involves no such thing as a price-level. The business cycle, therefore, in so far as it is complicated by speculation financed by bank credit, is a monetary problem. And speculation is a factor in every commercial crisis because, under our present monetary system, speculation boosts prices and heaps up debts, based on an inflated currency, which, sooner or later, debtors cannot pay. Whether speculation will continue to be a major cause of business crises appears to depend on our ability to find out much more about the exact workings of the monetary factors and to make use of this knowledge.

Competition among regular buyers to get goods for immediate use or sale — quite apart from speculative buying — is a factor in the upward price-movement. As soon as the opinion spreads among buyers that prices are going up, they rush into the market and exercise their power of upsetting the balance of supply and demand, which power they enjoy by virtue of the characteristics of money.[3] Buying is a mass movement. At one moment, nobody wants to buy since everybody expects prices to go down; the next moment, everybody wants to buy since everybody expects prices to go up. That is why there is no continuous market for pig-iron, or rubber, or leather, or for any other commodity the buyers of which can stay out of the market for months at a time, but must buy eventually. Price has little to do with the attitude of

such buyers, except in so far as it leads them to expect a change in price, or a period of stable price, and cost of production has little to do, on any given day, with price or with the attitude of buyers, except in so far as the deviation of price from cost of production leads buyers to expect a change in price. No price is too high to be tempting, if a higher price is expected; no price is low enough to be tempting, if a lower price is expected. That is why price-reductions, instead of stimulating sales, often have exactly the opposite effect. The man who is about to purchase an automobile for one thousand dollars is likely to buy quickly if he finds the price has gone up fifty dollars. If, however, he finds that the price has gone down fifty dollars, he may hold off in the hope of further reductions. This helps to explain the slump in the entire automobile market, in the fall of 1920, following the reduction in the price of Ford cars.

Once the buying movement has started, everything helps it along. When everybody is buying, everybody is optimistic; it is more difficult to get orders filled and more difficult to get goods transported. Therefore, everybody is inclined to place larger orders, and to place them farther than usual ahead of their needs. Thus, any competition at all among buyers, which begins with the mere expectation of higher prices, tends, when sustained by an increased volume of bank credit, to make prices actually higher, competition keener, and speculators more eager to buy.

In this stage of the business cycle, when the rapid increase of circulating purchasing power is facilitating speculation and carrying business forward to certain trouble, the monetary system of the United States shows great elasticity. The higher the price, the more eager are the borrowers to obtain loans, the higher are the dollar-values

of the goods offered as security for loans, and the larger, therefore, are the loans which the banks feel safe in making. It is not in the interests of any one bank to try to stem the tide, since refusal to take care of a customer who offers what passes as adequate security might only send the customer to a bank across the street. Thus all influences work together to expand credit precisely when expansion is most dangerous for business as a whole.[4]

It is a fundamental defect of bank credit, on the other hand, that the amount needed as circulating purchasing power, to keep men employed and the wheels of industry moving, goes out of existence precisely when it is most needed. Holders of large stocks due to forward buying, rather than to pure speculation, know from experience that a period of great activity has always led to a period of depression. As soon as they see a storm brewing, some of them throw goods overboard in an effort to avoid being shipwrecked. Holders of speculative stocks, as a rule, have no choice. Since they have used the proceeds of bank loans to purchase their stocks, they are forced to market them under pressure from the banks. The banks have little choice: they also must protect themselves. The change of facts itself forces them to act: the security upon which the loans were originally made is there in goods, but not in value.

The resultant drop in prices, particularly in raw materials, is precipitous. As nobody knows when the movement will come to an end, nobody orders more goods than are absolutely necessary. The general expectation that prices will go lower puts a brake upon the forward movement of business. New orders are placed merely to cover day-to-day needs; many old orders are cancelled, and some goods which have been delivered are returned. As a result, nearly all manufacturers either reduce their scale

of operations or close down completely. To meet reduced pay-rolls and reduced purchases, less money is needed. As rapidly as possible, therefore, they pay their bank loans. Their banking operations are offset to some extent by dealers who are increasing their bank loans because collections are slow. The net result, however, is a decrease in the circulating purchasing power of the country. This decrease, whatever the initial cause may be, tends further to reduce both prices and volume of orders; which, in turn, tends still further to decrease employment and the volume of money in consumers' hands, precisely when an increase in both is most needed.

Thus a period of prosperity comes to a close largely because industry is not financed in such a way as to place enough money in the hands of consumers to take away, at current prices, all that the markets offer. When this deficiency occurs, the only way in which bank credit can supply the lack of circulating purchasing power is through loans made by somebody; but at such a time nobody cares to risk losing his whole business through incurring new debts for the purpose of making goods that may have to be sold at a loss. The banks are powerless: bank credit is not created without borrowers.[5] The individual could help the general situation by using the proceeds of a loan to hire unemployed men, thus immediately putting more money into circulation; but most of it would be used to purchase other men's products. At such times, bank borrowing that is good for business as a whole is good for the individual only if others also borrow; but in a business depression our money economy does not induce prompt group action. This is the dilemma: most producers do not feel safe in using bank credit to resume or extend their business until there is a considerable increase of con-

sumers' purchasing power in daily use; but there is no considerable increase until producers use bank credit.

The great merit of the elastic feature of our Federal Reserve System is said to be that it responds quickly to the needs of business. As a matter of fact, when prices are rising it responds too readily to the pressure of business for loans, relying on the theory (which we have shown to be fallacious) that the so-called self-liquidating loans cannot cause inflation. Thus, the Reserve System gets into a position in which it cannot take care of the resultant untoward business situation. In other words, bank credit expands most readily when, for business as a whole, expansion is most injurious; and it contracts most readily when, for business as a whole, expansion is most beneficial. These evils were not introduced by the Federal Reserve System: they existed under the old banking system. Indeed, the shortcomings of the old system, the panics which it was powerless to avert, and the superior features of the present system are well known.[6] Our purpose is not to contrast the Federal Reserve System unfavorably with any of the systems of the past, but to call attention to some of the monetary problems that are yet to be solved.

CHAPTER XV

MONEY IN PRODUCTION

MONEY has been an indispensable means by which man has developed the specialization and coöperation which characterize modern industry, accumulated a vast store of wealth, created modern nations, and made possible our present standards of living. Without money, it would be impossible to maintain either the production or the distribution that determine the real wages of modern times. This is the general conclusion we reached at the close of our account of the more obvious uses of money as a medium of exchange. We may well consider the further significance of the fact that money is indispensable to production.

Before we proceed, however, we should emphasize the fact that our discussion is concerned with money in an industrial order that is based on the private ownership and operation of the agencies of production, conducted for profit, under the freest possible conditions of competition and individual initiative. Naturally, those who believe in a radically different industrial order will disagree radically with what we say concerning the function of money in production. We would gladly discuss what might happen in a far different world, if we could find anywhere a clear description of that world. In the present volume, we are concerned only with the rôle of money in the world in which we live — a world that preserves the fundamental characteristics, which we have just enumerated, of the present economic order in the United States.

Capital Goods are Essential Agents of Production

First of all, we should note that capital goods are indispensable to production, as production is carried on today, and as it must be carried on if the present population of the world is to obtain even the bare necessities of life. We are speaking now of capital goods, as distinguished from money which is one form of capital. Of the four "agents of production" — land, labor, management, and capital goods — the last is the least understood, partly because the term continues to be used in different senses. Yet, to understand what we mean by that term throughout this discussion, we have only to distinguish in a general way between two classes of goods that we see about us every day. At home, we make use of our house and the things in it — chairs, potatoes, phonographs, magazines, cotton, gloves, coal, and the like. All these goods, as they are and where they are, directly satisfy our wants. Since we use them up solely for this purpose, we call them consumers' goods. There are also factories, warehouses, and stores, containing these goods ready for distribution, as well as lumber, iron, paper, leather, and other materials ready to be made into finished products, together with machines, oil, coal, and other supplies that will be used up in the process of making goods, but will not be a part of the goods. All these things cannot satisfy our wants directly. This part of our national wealth, which is used as a means of producing more wealth, we call producers' goods, or capital goods.[1]

A cotton loom and a bale of cotton are both capital goods. But there is this difference between them: the machine can be used for one purpose only: the raw material, on the other hand, is readily available for scores of uses. One is fixed capital: the other is free capital. Be-

tween them, a sharp distinction cannot readily be made. In general, however, fixed capital includes machines, factories, warehouses, railroads, and other physical properties that cannot readily be used for any other purposes. Free capital consists of goods on hand, including raw materials such as copper, rubber, cotton, and all the wire, paper, bolts of cloth, and other finished and semi-finished supplies in the manufacturing and selling industries that are available for many uses. There is no accurate measure of the free capital of the country. It may be in the vicinity of ten per cent of the total capital; at times, no doubt, it is less than ten per cent, and at times it may be more than ten per cent. The importance of free capital, however, cannot be measured in percentage figures, for much of our fixed capital is useless without an adequate, continuous supply of free capital. Without cotton and rubber, tire factories must shut down.

Not only must we have capital goods, but constant supplies of fresh capital goods. When the factory whistle blows at the end of each working day, the building is more nearly obsolete and every machine in it is a little nearer the junk pile. This is one of those economic facts that are so obvious that their importance is constantly overlooked. It seems, sometimes, as though the abstruse problems of economics might some day be solved, if, first of all, we could see clearly those aspects of our industrial life that are as patent as the force of gravitation. Accepted explanations of the physical world long ignored even the law of gravitation. Men may yet be induced, before promoting projects for the reorganization of the industrial world, to take into account the necessity for constant accumulations of fresh capital goods.

Capital Goods are the Result of Saving

Now it so happens that continuous accessions of both free capital and fixed capital will not be forthcoming unless men have sufficient incentives to save; for capital results only from saving. It is possible to gather spruce gum with the bare hands: it is much easier to use jackknives. One is primitive production: the other is capitalistic production. Jackknives used in this way are capital — results of past savings. So are the elaborate buildings, furnaces, cutters, elevators, wrapping machines, and motor trucks that are used annually to supply fifty million people, more or less, with Wrigley products. The jackknives and the chewing-gum factories serve the same economic function. Both are surplus products of past efforts, saved in order that future efforts may be more productive. Unless somebody, sometime in the past, had consumed less than he produced, we should all have to gather gum, catch fish, plant corn, and defend ourselves from wild beasts without any more efficient tools than unfashioned sticks and stones. Unless many thousands of people had made large savings in the distant past, and unless people had *continued* to save generation after generation, most of us would not have been born, and the rest of us would be struggling with nature for the barest means of subsistence. Our harvesting machines, cotton mills, telephone systems, railroads, and electric power plants would have been impossible. Indeed, the standard of living which is now regarded as a minimum of comfort and decency for everybody would have been beyond the reach of anybody.

Standards of Living depend on Production

Standards of living depend mainly on the volume of

production. Consequently it is futile to expect permanently to lift the standard of living of wage-earners as a whole by lifting the general level of wages. A cat does not get far while it is chasing its tail: to pursue living costs with wage increases is to follow a similar circle of futility, for the cost of living itself is determined mainly by wage schedules. The American Federation of Labor is right in declaring that "the practice of fixing wages solely on a basis of the cost of living is a violation of sound economy and is utterly without logic or scientific support of any kind." All arbitrary wage awards are economic nonsense. Nothing we can do to wages will enable every one to obtain ten bushels of wheat if the per capita production is five bushels. "The significance of the Labor Movement," says Mr. Hobson, "will continue to be misunderstood so long as it is regarded as a mere demand for a larger quantity of wages and of leisure, important as these objects are. The real demand of Labor is at once more radical and more human. It is a demand that Labor shall no longer be bought and sold as a dead commodity subject to the fluctuations of Demand and Supply in the market, but that its remuneration shall be regulated on the basis of the human needs of a family living in a civilized country."[2] As an ideal, this has merit: as a demand, it is absurd. The remuneration of labor is not based on ideals, but on goods. The hope of a higher standard of living for the people of any nation depends first of all upon a higher volume of production.

This brings us back to our central theme; for it is the fact that workers are paid in money rather than in goods that tends to obscure their dependence upon capital and its efficient use in production. In the days when the majority of workers were independent mechanics, or fishermen, or hunters, or traders, it was easy for them to see

the importance of "capital" and the relation between productivity and their own material welfare. But when the modern employer and money wages intervene between the workman and his product, he is constantly in danger of making the mistake of thinking that, by interfering with the accumulation of capital goods and with their productivity, he can greatly injure his employer without greatly injuring himself.

Savings are encouraged by Safety

In order that man might emerge from savagery, it was necessary for him to do more than create surplus wealth. He had also to solve the difficult problem of devising means whereby surplus wealth could be safe and, at the same time, employed in the creation of more wealth. At the dawn of civilization, he partly answered this problem by the use of money. For a long time, he put his money in clumsy ironclad boxes, fastened with huge locks. To this day at Oxford, as George W. Gough reminds us, they talk of the University Chest, and in the Bodleian Library display Sir Thomas Bodley's chest.[3] In the United States, we talk nowadays about the Community Chest, but this is only picturesque language. When we save money for any purpose, we do not put it in a stout box where it would be useless and unsafe, but in a stout bank where it is both useful and safe.

As capital goods depend on savings, so savings depend to some extent on the expectation of safety. The growth of capital goods — and consequently the increase of production and the raising of standards of living — are impossible without security of property. We cannot expect men to sacrifice, and to save enough to meet the growing needs of mankind, if there is no assurance that, in the end, they will be allowed to enjoy their savings; any more than

we can expect men to work faithfully and long if there is no guarantee that in the end their wages will be paid. As soon as the Russian peasants found that their surplus wheat would be seized by the Government, they raised no surplus. It matters not what a man's social theories may be. He finds no compensation for his loss in the thought that his property has been appropriated in the professed interests of the proletariat. What he has saved is gone: he will save no more.

Continued Supply of Capital Goods depends on Profits

After men refrain from consuming all that they produce, and accumulate savings in the form of money, they must be induced to use their money to produce more wealth or to lend it to somebody who will so use it. The inducements are profits and interest. The fact that rich men invest their money, and thus become still richer, does not make them enemies of wage-earners. On the contrary, most investors directly benefit wage-earners, for most of the money that they invest in stocks and bonds, or directly in factories and mines, is soon paid out in wages. Still more important is the fact that virtually all the money thus invested has an essential part in producing the wealth which alone makes possible higher standards of living for the wage-earners themselves, or even the maintenance of existing standards. Civilization is in no danger because men strive to accumulate wealth: it would be doomed if they ceased striving. Real wages could not be as high as they are to-day unless many men had saved money and invested it profitably.

Profits are often spoken of as though they were chests of money, and as though the country were in imminent danger of having all the money hoarded by a few men. In reality, private fortunes are mainly in various forms

of capital, — warehouses, ships, power plants, stores of copper, and so forth. As a rule, the only way in which they can add to the fortunes of their owners is through serving the needs of other people. The owners are not using them for their own enjoyment and will not take them away when they die. It is when men of wealth spend money freely, however, that they are applauded, particularly if they spend it on other people, or give it away. Yet the economic calamity would be the greatest in history if all men of wealth, regardless of the state of business activity, should use their money mainly in consumption instead of mainly in production. As a class, spendthrifts or unwise investors who lose their money do economic harm to the country; but, as a class, wise investors gain profits through the very act of helping the country. It follows that, in so far as men invest their incomes profitably, they act as a rule as faithful trustees of wealth. This is as true of John Smith, a mechanic, who out of his savings buys and retains one share of stock in the Standard Oil Company, as it is of John D. Rockefeller. Both men produce more than they consume. Consequently, as a rule, the more successful they are, the more they contribute to the material comforts of mankind.

As a rule — but not always. As long as society enjoys the benefits which come from allowing its members much freedom of initiative, society must suffer to some extent from anti-social forms of initiative. Not all investors who make profits also promote public well-being. The profits may come from fraudulent enterprises, political corruption, parasitic trades, and forms of speculation and of monopoly that are economically harmful. Society must always be on the alert to protect itself from the small minority of its members who make it seem, to some people,

as though profits that arise out of harmful enterprises were the rule instead of the exception.

They are not the rule. If a Workmen's Council suddenly found itself in absolute control of all industry in the United States, their first and most important task, in their own economic interests, would be to devise some means of inducing all men to continue to save their money and invest it in production; and the Workmen's Council would discover, sooner or later, as Russia has already discovered, that the most effective means are the institutions of private property, interest, and competitive industry conducted for personal profit.

The profits that result from the use of capital in production injure society economically to the extent that they are used in excessive consumption. And excessive consumption is bad whether it is by individuals or by governments. But, as a matter of fact, most of those who receive large incomes spend small proportions of their incomes in personal consumption. Some of the men and women of great wealth, who have been most frequently condemned as public malefactors, have consumed for personal enjoyment less than one per cent of their profits. The rest of their profits have been used in the production of further wealth; and of this wealth, again, they, themselves, consume less than one per cent. This is a small price for society to pay for increased production.

It might appear at first thought as though wage-earners, as a body, would have been better off if all the profits had been promptly disbursed as wages and if the growth of large fortunes had thus been prevented. It must be admitted that, if profits were more widely distributed, and if those who received the profits saved them to the same extent and invested them as wisely as they are now saved and invested, the net result would be at

least as large a volume of production as we now have. And there would be other gains. The fact is, however, that the savings which distinguish civilization from savagery, and which have made possible most of the material satisfactions of life, have been due chiefly to the voluntary savings of a small proportion of the human race. If the products of industry had always been distributed equally and savings had been entirely at the option of each individual, there would have been nothing comparable to the present accumulations of wealth. Consequently, the standard of living of wage-earners would have been far below what it is to-day. That is to say, savings have been forced upon the human race, not always without doing injury to some workers, but on the whole for the immeasurable benefit of the race.

This is true even though very large profits are made by producers and investors. Whether or not these profits actually reduce the workers' share in the products of industry depends on what is done with the profits. If the profits are reinvested promptly enough in directions dictated by the daily purchases of consumers, it is the people as a whole and not the investors who have the immediate enjoyment of the profits. For, in this case, most of the profits are soon disbursed as wages; and when the goods, for the production of which the wages have been paid, reach the markets, they are consumed mainly by wage-earners. This is not the whole story, by any means; and nothing we have said warrants the conclusion that the fruits of industry are now distributed in satisfactory proportions among all those who take part in the processes of production. All we wish to emphasize here is the fact that projects for a better distribution of wealth will be futile unless they take due account of the function of savings, capital investments, interest and profits in producing the wealth that is to be distributed.

We have now taken into account the main contentions of those who decry profits; but we have not yet mentioned the chief indictment that might well be made. Oddly enough, this has escaped nearly all the reformers. We concluded above that whether or not profits actually reduce the workers' share in the products of industry depends on what is done with the profits. Now, in a period of rising prices, profits may be so employed as to prevent enough money from flowing into consumers' hands to take away, at the current price-level, the commodities that have been produced. Thus, a lag in the flow of money from one use in consumption back to another use in consumption, due to certain dispositions of profits, may lead to business depression through causing a deficiency of purchasing power in consumers' markets. But this subject we must postpone: we are encroaching upon the domain of our concluding chapters.

Taxation may curb Growth of Capital Goods

Taxation without representation may be tyranny; but taxation without production is impossible. When taxes are so levied as to prevent the growth of capital goods, and thereby to prevent increased production, they cut off the sources of further revenue. They kill the goose that lays the golden egg. Continued taxation requires the continued replacement of old capital and accumulation of new capital, which is impossible when the unproductive expenditures of the Government run riot. No shoe manufacturer can extend or even maintain his production facilities, if he spends too large a proportion of his receipts in pensioning employees, in ornamenting his plant, and in policing it. No nation, no matter what the form of government, can escape the same economic forces. They are no respecters of government. Production may be para-

lyzed, not only by the autocratic control of absolute monarchy, but as well by the irresponsible tyranny of democracy. By means of direct taxation, or by means of illicit taxation through inflated currencies, or by means of military force, a government may seize and dissipate existing capital; but in the future it will find no means of seizing the wealth which it has thereby prevented its people from producing.

It is necessary that the rich should be taxed, and it seems just that they should be taxed at a higher rate than the poor. Certainly nothing is gained by shifting taxes, directly or indirectly, from those who have large incomes to those who have small incomes, if the net result is to interfere with progress toward an ideal industrial order: if men and women are so impoverished that they cannot discover and apply continuously to the service of society their best abilities of body and mind. The point we are making is that higher taxes on the wealthy do not necessarily lighten the real burdens of the poor, and lower taxes on the wealthy do not necessarily increase the real burdens of the poor. If the problem were as simple as this, wage-earners could improve their condition at any time merely by voting to increase the taxes on large incomes. But there are difficulties in the way. One, as we have said, is that the net result may be reduced production. Another is that all taxes from whatever source are spent by the Government. This would be no difficulty at all, if the Government always used the money more efficiently than private enterprises could use it in producing commodities and services for the enjoyment of its people. It is not certain, however, that money goes as far, dollar for dollar, toward satisfying human desires when spent by the Government as when employed in competitive industry: and whatever the Government wastes is a loss to all

the people, no matter where the money comes from. It is a greater injury, however, to the poor than to the rich, because it curbs their consumption of the necessities of life; whereas money taken from the rich in the form of taxes is taken chiefly from the amount that they would otherwise invest in further production.

Money unlike Other Forms of Capital

Money is a form of capital because it is used in the production of wealth. Money, however, is unlike other forms of capital, because an increase in the volume of money may or may not mean an increase in capital wealth. We cannot create wealth by writing credits on the books of the banks, any more than we can create theaters by printing a boundless supply of admission tickets. Again and again, our bankers have emphasized this fact. Banks can do no more, through the making of bank loans, than to give command over existing capital goods to those who can use them most productively. The common measure of the value of capital is in terms of dollars at current prices; but, as we have had occasion to observe over and over again, the identical machines, factories, stocks of wool, leather, and so on — which constitute our capital — may go up and down rapidly in dollar-value. As the money-value of capital goes up during a period of inflation, there is an increase in the volume of credit. It is easy to make the mistake of regarding such a vast increase in credit facilities as we had immediately following the World War as a vast increase in capital facilities. To guard against this error, we must distinguish carefully between the actual physical goods and an increase in bank credit based upon these goods.

We must also avoid the error of considering the production facilities of the country merely in grand totals. Fol-

lowing the War, the facilities for the production of ammunition, chemicals, ships, and automobile tires were in excess of the country's needs. In order to estimate the adequacy of the capital equipment of the country at any given time, we must first subtract such excesses wherever they exist. A shipbuilding plant, upon which the Government has spent ten million dollars, may be included at that figure in the estimate of the capital equipment of the country; whereas it may mean, economically, that ten million dollars have been diverted from profitable to useless channels. The extraordinary extension of capital facilities in certain directions during the War and immediately after the War, and the extraordinary book profits of that period, led many people to overvalue the supply of capital in the United States. If we considered the proportions which should prevail among various forms of capital equipment for the purposes of peace-time production, and made allowance for the increase of population, we might find that the capital equipment of the United States, after the War, in proportion to the needs of the country, was actually inferior to the capital equipment before the War.

The business depression of 1920 was due, in part, to business procedure based on overestimates of the existing volumes of real capital, real income, and buying capacity. Much that was regarded during the busy days of 1919 as increased wealth proved to be mere book values as soon as a downward movement was under way. From the outbreak of the War in 1914 to the crest of prosperity in 1920, loans and discounts of the national banks in this country were approximately doubled. The individual deposits in reporting banks were also approximately doubled during the same period. In laying out production schedules, many business men, in one way or another, were misled

into regarding this extraordinary increase of bank deposits as evidence of an extraordinary increase in wealth. Yet, during this period, taken as a whole, the increase in the production of wealth did not proceed much more rapidly than in the years before the War, when there was no extraordinary increase in bank loans, discounts, and individual deposits. From 1914 to 1920, according to one estimate, there was less than two per cent increase in the physical volume of capital goods.[4]

To meet the needs of production, there is enough money when the supply of credit is such as to bring about the best use of the supply of capital goods. In many countries, to-day, there is too much money to do business with; that is to say, the expansion of credit in spite of the destruction of capital goods has produced violent price-movements which have destroyed the usefulness of money as a standard of value, broken down working relationships among the agents of production, and, consequently, still further increased the discrepancy between credit and capital goods. On the other hand, there would not be enough money for the purposes of production if capital facilities were really doomed to prolonged idleness solely because of credit stringency.

In the recent experiences of Europe — since they have magnified economic phenomena several diameters by means of monetary inflation — the distinction between capital goods and credit is most clearly seen. From the outbreak of the World War until 1921, the volume of bank credit in France increased more than six hundred per cent, and in Germany more than six thousand per cent. In both countries, credit increased by leaps and bounds at the same time that capital goods were being daily destroyed. Indeed, generally speaking, throughout

Central and Eastern Europe, bank credit has increased and capital goods have decreased.

Money an Essential Agent of Production

Land, labor, management, and capital goods are essential agents in production. But evidently there are other essentials. During the year 1918, the United States reached its maximum production: during the year 1920, production came nearer to a standstill than ever before. Yet there was just as much land in 1920 as in 1918, just as many laborers, just as many managers, just as much capital goods. There was the land, waiting to be tilled; there were the laborers, even more eager to work than before, for their needs were greater; there were the managers, even more competent than formerly, for they had learned from adversity; and there were the closed factories, empty freight cars, idle power plants, silent shipyards, about as fit to carry on as in the busiest days of 1918. Something essential to production was lacking, and that something was the vitalizing force of money in actual use.

The individual producer must have money wherewith to buy and maintain his fixed capital in the form of land, buildings, machines. He has constant need of money to pay for coal, oil, and other supplies which are used up, as well as for raw materials and semi-finished products, for which he may receive nothing until they are embodied in finished goods and sold and paid for. To meet still other needs, he must keep on hand a daily cash balance. He must have money also to meet emergencies: he does not always receive enough for the products of previous months, or receive it promptly enough, to pay the operating expenses of the current month. His expenses may outrun his receipts, because of seasonal or cyclical fluc-

tuations in his own business; or because of the misfortunes of his customers; or because during a shut-down expenses go right on, though receipts may dwindle or stop. Above all, the producer must have money for his pay-roll. The laborers must be paid to-day, even if the goods they are working on are not sold for many months. The individual wholesaler also needs money. In order to take advantage of the market, and to be prepared to fill orders promptly, he must buy at times in advance of known demand. It is part of his business to take these risks. For this purpose, he must have additional money. Similarly, the producer of raw material must incur expenses in advance, often years in advance, of the sale of his products. In order that manufacturers may have rubber and hides this month, somebody for many years has had to pay the operating expenses of plantations and ranches.

It is true that the retail merchant may obtain additional book credit from the wholesale merchant; who, in turn, may be granted further credit by the manufacturer; who, in the same manner, may pass along some of the extra burdens to the producer of raw materials; who, in this emergency, may apply to his bank for a new loan. But this passing-on process is merely a device for temporarily meeting the costs of production, mainly wages: somewhere, sometime, consumers have to spend enough money to meet all the pay-rolls or (as we hope to make clear in succeeding chapters) production must cease. Book credits do not pay wages, and even for other purposes they are only short-time aids. Recourse to banks is also only a temporary expedient. The whole elaborate organization of production and consumption is predicated on the assumption that in due time the consumer will have enough actual money to pay all the bills all along the line. In short, no matter how abundant the supplies of

land, labor, management, and capital goods may be, production cannot go on without money.

At this point in our discussion we may well revert for a moment to the meaning of the rate of interest. From what we said in our chapter on that subject, and from the commonplace observations we have just made concerning the necessity of money in production, it is evident that general economic progress requires interest rates that will encourage constant accumulations of fresh capital; that is to say, rates high enough to induce men to run the necessary risks in lending money, yet low enough to encourage enterprisers to borrow money. This is precisely the level toward which interest rates constantly tend when not subject to arbitrary Government interference.

Summary

When we consider that our material necessities and comforts of life depend mainly on production; that production requires constant accumulations of fresh capital goods; that these accumulations are impossible without a medium of exchange; that capital goods, even after they have been accumulated, cannot be employed in production without the use of money; we see clearly that money is far more than "a mere convenience" — far more than "a contrivance for sparing time and labor." Without money, rightly employed, most of the machinery of production stops and labor is unemployed. As well call the machinery itself a mere convenience, or the directing brains of industry a mere convenience. When several agents are all indispensable for a given purpose, there is little profit in discussing their relative importance. Here, again, we may miss the point if we follow the counsel of those who insist that we must look beyond the mere medium of exchange to "the real wealth which it repre-

sents." If we are to explain such economic phenomena as the post-war business expansion and subsequent depression, it is upon money in its relation to real wealth that we must focus our attention. Money is essential in production: that fact, in itself, will continue to urge upon us the necessity for further studies of money.[5]

CHAPTER XVI

MONEY ADVANCED IN PRODUCTION

Periodically, extreme competition among buyers, stimulated by rising prices and sustained by expanding bank credit, is followed by what is called overproduction; namely, a volume of production so large that the consumers' purchasing power is insufficient to take the goods off the market at prevailing prices. At once, the whole machinery of production and distribution slows down. Then the index of business activity, as pictured in Figure 1 of our opening chapter, falls; and the dark area of economic loss expands. The question should be thoroughly investigated to what extent and under what circumstances this cyclical movement is associated with what we may call the time-factor in production. By the time-factor we mean the period elapsing between the day when wages are paid in connection with the production of goods, and the day when the goods are placed on the market for the production of which the wages have been paid.

Let us consider, in detail, this time-factor in production. Take, for example, the total goods — shoes, gloves, automobiles, plows, and so forth — placed on the markets of the world during any one month, say, April. These goods could not have been produced, as we have just observed, unless money had been paid to numerous people far in advance. For a large proportion of these goods, wages were paid to the producers and distributors in January, or earlier. This prepayment would cause no serious complications if there were, as men have often assumed, an even flow of purchasing power in the other

direction all the way around the circle — wage-earners to retailers, to wholesalers, to producers, and thence back to wage-earners. But on account of price-fluctuations, and resultant speculative buying and withholding of goods, and miscalculation of consumers' demands, and changes in production due to all these causes, only rarely are the goods placed on the market in April exactly equal in volume to the goods placed on the market in January — that is to say, at the time of the creation of that purchasing power. Therefore, there is seldom a perfect adjustment between *current* purchasing power and *current* goods. In other words, there is a fluctuating relation between *present* effective consumers' demand and supply *previously* created.

The Gap between Current Consumption and Current Production

Until we know the consequences of this gap between current output and current consumption, we are liable to neglect certain economic phenomena of major importance. These consequences are not apparent, however, if we consider only current conditions. In 1921, the President of an important National Bank in New York City spoke effectively of the present "serious maladjustment between the production and consumption of current goods."[1] But he did not thereby direct attention to the basic difficulty. The serious maladjustment is not between *current* production and *current* consumption. There is a current maladjustment, to be sure, since, in a period of depression, consumption exceeds production. When four million men are unemployed, they are producing nothing; but they are helping to use up the stocks on hand. At such times, however, excess of consumption over production is not serious: it is salutary. It is not

to be deplored, for it is the necessary preparation for increased business activity. It is the price we pay for overproduction in the past. It is to some extent the result of a maladjustment, created months before, between purchasing power disbursed at that time as wages and goods *previously* produced, which was then looked upon as prosperity. And it is this antecedent maladjustment that deserves most attention. Money — especially bank credit — has made it possible on a scale previously inconceivable.

This maladjustment is due to the fact that producers can pay for labor and material with their savings in money or with newly created bank credit, while they are making and holding more goods than the market will take at prices sufficient to induce them to continue production. This could not possibly go so far under a system of barter, because the volume of goods a producer could store up, at any one time, and succeed in exchanging for the particular labor and materials he needed for the production of more goods, would be comparatively small. Even if workers were paid in goods previously accumulated, wages would have at least a definite limit, for the maximum goods available for wages could not be more than the actual store of exchangeable wealth; and this would be comparatively small because of the costs and risks enumerated above.[2] Thus there would be an inflexible upper limit, far below the upper limit of purchasing power that can now be created through the expansion of bank credit. Therefore, under a barter economy, fluctuations in the ratio of consumers' goods and consumers' demand, due to the time-factor that we are now considering, would be slight.

The crux of the matter is this: under a system of barter, buyers could not get hold of what *appeared to be* a valid

claim upon vastly more than the total stock of goods in existence. Elastic currency and bank credit, on the other hand, make payments possible which have no fixed relation to the store of wealth, or to the goods currently reaching the markets, or to the goods currently produced.

Money advanced to increase Capital Facilities

Our modern financial and industrial organization of society is such that, for years at a time, men may make daily, effective demands as consumers without themselves supplying any consumers' goods. When such demands increase rapidly, as they do when the construction of new capital facilities is financed by means of the expansion of bank credit, the result — unless offset in some way — is a consumers' demand in retail markets that is not yet met by increased supply. That such a result came in the United States following the War is not surprising when we consider the rate of growth of capital authorized in connection with new corporations and the parallel expansion of bank credit. For seven years previous to 1919, the amount of such capital did not greatly exceed three billions of dollars a year. During 1919, however, the amount was above twelve billions, and during 1920 it was above fourteen billions.[3] These figures have to do only with the capital of new enterprises. There were also vast increases in the capital of established concerns. Suppose we assume that scarcely half these additions to authorized capital quickly reached the markets as buying power. Even so, since the growth of capital came largely through expansion of bank credit, these corporations, new and old, were putting a huge new dollar-demand into the retail markets in advance of new goods.

In many cases, the discrepancy between wages paid and goods placed on the market is more than a question

of time. Especially during periods of rapid business expansion, there are likely to be many pay-rolls that do not at any time lead to the production of goods that will sell for enough to cover the pay-rolls. The United States Government, for example, built 285 wooden vessels at a cost of $230,000,000 and sold them for $430,000. The net result was to place more than four hundred dollars of effective demand in the markets for every dollar of supply. With similar results, one of our construction companies built a rolling mill on Staten Island for $5,000,000 and, before turning out any product, scrapped the mill for $350,000. The more there are of such projects, not financed out of savings, in the initial stages of a period of business expansion, the more difficult it becomes for supply of goods to catch up with increased dollar-demand.

There is no such difficulty when new construction is paid for out of savings. Thousands of men, for example, were engaged in constructing the Panama Canal. After two years of hard labor, they had moved vast quantities of earth and had thereby contributed to society a long, deep ditch, which was of no use to anybody: it was not yet ready for ships. Nevertheless, throughout the two years, the men who dug the ditch had received money regularly and were thereby enabled to make daily, effective demands upon the stocks of consumers' commodities. Since, however, the wages of these men were paid mainly by means of taxation which did not involve expansion of bank credit, what these consumers spent was taken from other consumers, and the construction of the canal did not tend to unbalance supply of commodities and demand for commodities.

The Time-Factor and Overproduction

A period of prosperity continues until the productive

agencies of the country reach the highest efficiency they will attain. When this point comes, few men are aware of the fact, because the volume of commodities offered for sale does not indicate either the large volume in the making or the invisible supply in the hands of speculators. Failure to sense the coming glut is due in part to the wide geographical distribution of markets for the same commodities and of producers for the same market, to Government restraint upon trade associations, and to lack of publicity concerning current stocks and commodities in process. On account of the time it takes to produce commodities and get them into the shops, the markets do not feel the full effects of maximum productivity until months after that stage has been reached. Production, therefore, continues at a high rate; and the volume of commodities coming upon the market, as a result of loans previously made, continues to increase. Many producers do not foresee that the pace cannot continue indefinitely, and some of those who perceive that this is true of other lines of business believe that it cannot possibly be true of their own. In any event, while profits are unusually high, they believe that they can afford to carry unusually large stocks of materials: and, as deliveries become more uncertain, they must carry even larger stocks all along the line from raw materials to finished products, if production is to be uninterrupted. As there is a limit, however, to the expansion of bank credit, the time comes when there is a decrease in the amount of money, advanced by banks to producers, that reaches consumers' hands. Presently, therefore, the consumers' purchasing power is insufficient to buy the increased volume of products at prevailing prices. Then there is said to be overproduction; prices break; goods scurry out of hiding like rats from a sinking ship; business finds, all along the way from deal-

ers in raw materials to retailers, that smaller stocks will suffice for daily needs; prices fall abruptly; a crisis or a period of depression follows; men and women are thrown out of work; and business is again on the downward swing of the cycle.

Workers are not paid in Goods

Thus, due consideration of the time-factor in production reveals another case in which the assumption that money is of little importance obscures what actually goes on in the domain of commerce. In a mistaken attempt to make simple that which is in reality exceedingly complex, many writers have insisted that, since workers are really paid in goods, the use of a medium of exchange for wage payments may be ignored. But workers are not paid in goods: they are paid in money. *Ultimately*, it is true, they are paid mainly in goods; but time is the essence of our difficulty: for, as we have just seen, the fact that workmen are *first* paid in a medium having the characteristics of money and the fact that this medium becomes a demand, not upon the goods they are making, but upon goods already finished and in retail markets, appear to be connected with the major difficulties of the business world.

The question is pertinent, therefore, to what extent and under what circumstances general overproduction and business depression are associated with advanced payments in production. The answer to this question depends in part on the extent to which the effects of the time-factor are modified by overbuying, speculation, increase of capital facilities, exchange of ownership of capital goods, profit rates, interest rates, changes in the wage-level, and foreign trade. The answer also depends in part on the stage in the upward or downward swing at which

these various influences become effective. Quantitative and time studies of some of these factors are as yet too fragmentary for our purpose; although, fortunately, several new research agencies are now at work in this field.[4] But already the conclusion seems warranted that the answer to our question depends mainly on the extent to which the factors we have mentioned and others influence the volume of money daily spent in consumption. To that subject, we shall now turn.

CHAPTER XVII

MONEY IN CONSUMPTION

MONEY spent in the consumption of commodities is the force that moves all the wheels of industry. When this force remains in right relation to the volume of commodities offered for sale, business proceeds steadily. When money is spent faster than the commodities reach the retail markets, business booms forward. When commodities continue to reach the retail markets faster than money is spent, business slackens. To move commodities year after year without disturbing business, enough money must be spent by consumers, and no more than enough, to match all the commodities, dollar for dollar. Otherwise, there is sure to develop presently either a glut or a shortage, a resultant change in the price-level, and a tendency toward business depression. In short, production looks for its regulator to distribution; and distribution in turn is regulated by the flow of money through consumers' markets.

Consider first the results of this regulation in a period of relatively stable prices. In such a period, unless consumers continue to spend as much money as usual for shoes — to take a typical consumers' commodity — retail shoe dealers do not buy as usual from distributors. Unless retail dealers continue to buy as usual from distributors, distributors do not buy as usual from shoe manufacturers. Unless distributors keep on buying shoes, manufacturers do not keep on buying leather. Unless they buy leather, tanners do not buy hides. Thus, once the consumer has failed to do his usual part in taking away

the finished product, there is a piling up, all along the line, of raw materials, semi-finished products, and finished products. There is, in consequence, all along the line, a curtailing of production, a reduction of pay-rolls, and a cumulative deficiency of consumers' purchases. The same effects are felt in the markets for producers' commodities. If the people curtail their purchases of shoes, the manufacturers make fewer shoes. Consequently, they reduce their orders for shoe machinery. Producers of shoe machinery, therefore, modify their scale of operations and reduce or entirely stop their orders for pig-iron and other raw materials. Thus, when consumers buy less than usual, they put a brake upon the whole series of operations, in the domain of producers' commodities as well as in the domain of consumers' commodities, all the way back to the ranch and the mine.

All this is equally true of a period of rising prices. Moreover, in such a period the difficulty of moving all the commodities that are produced becomes greater because of the fact that current production is never planned to satisfy current demand: always it is planned to meet an expected demand that may not materialize when the commodities are ready for sale. When prices are rising production schedules and costs are predicated upon an expected, increased demand — upon a continued rise in prices. At every stage in the production process from the ranch to the retailer, everybody is eager to take full advantage of a rising market. As a result, the cost and scale of operations come to be regulated not, as in a period of relatively stable prices, with reference to the expected continuance of the *present* dollar-demand of retail buyers, but with reference to the larger *anticipated* dollar-demand. When production is thus regulated, it cannot continue at the prevailing level of volume and costs without a *con-*

tinued increase in the amount of money spent by consumers. In 1920, for example, consumers could not meet the expectations of producers merely by spending as much as in 1919. Depression followed. All of which brings us again to the conclusion we reached in a previous chapter. Inflation calls for further inflation: it is a drug habit. Once business has become dependent upon an artificial stimulus, new doses must be injected or business will suffer depression.

Thus, whether the price-level is stable or changing, it is the amount of money spent for consumers' commodities that determines the state of business activity.

That is the fundamental reason why the business men of this country are concerned lest the nations of Europe should pay their debts to us in commodities. "Let us figure to see whether the payment of these debts," said Thomas W. Lamont, "which inevitably must mean a great increase in our import and a heavy decrease in our export trade, is going to prove an asset or a liability for American business."[1] Why a liability? Are not gloves from France real wealth, and olive oil from Italy, and cutlery from England? Can there possibly be any danger of importing more European products than we can enjoy? The idea seems absurd. As long as we pay no attention to possible monetary complications, we see no reason to worry over the prospect of acquiring real wealth. Here, again, if we ignore "the money surface of things" and focus our attention on commodities, we overlook the key to the whole situation. But when we consider the fact that in this case the process of importing commodities would not put into the hands of consumers the money wherewith to buy those commodities, and a period of falling prices and business depression might ensue, we see that the net result of importing real wealth might be

economic injury. All because money — an instrument which men designed for their own convenience — inconveniently stands in the way of the uninterrupted enjoyment of the wealth which they have created.

Only Money spent in Consumption can sustain Production

As no force except money spent in consumption can sustain production, year in and year out, we may here confine our attention to the volume of commodities that pass into consumers' hands through the medium of money. In our day, as we have observed,[2] the volume of commodities moved by barter trading is insignificant. By no means insignificant, as we have pointed out,[3] is the volume moved on open-book account. But such an expedient is only temporary. Presently there must be money payments or no further movements of commodities. Under a money economy, no large influences can *continue* to bring about marked fluctuations in the state of business activity unless they change the relation of the amount of purchasing power spent in the consumption of commodities to the volume produced.

This is contrary to the widespread belief that if a sufficient number of people talk prosperity with sufficient enthusiasm, they can bring on a commercial revival that will be sustained by its own momentum. The sunshine cure for business anæmia overlooks the function of the buyer in business and the only conditions under which he can continue to buy. Artificial respiration cannot keep the patient alive indefinitely. A spirit of optimism cannot long create or sell commodities: it cannot of itself operate a blast furnace nor take shoes off the retailer's shelves. It must first induce somebody to spend money. To persuade business to prepare for an effective consumers' demand that is not forthcoming merely makes matters

worse. At certain times, it is true, business is not unlike a machine on a dead center: once started by a push from the outside, it can go on by itself. But this happens only when something more substantial than the booster's spirit has increased the consumers' purchasing power. At best, optimism can do no more than start a forward movement a little earlier than it would otherwise have started. Business cannot run on optimism. Many upward turns in stock markets, as well as in copper and cotton markets, are due to states of mind; but reactions soon occur unless mere expectations are justified by real purchasing power. A self-starter may save time in starting an engine, but only a steady supply of gasoline can keep it running. Sunshine campaigns may start business, but only consumers' dollars can sustain it.

Production schedules, to be sure, are based on estimates of future market conditions; and these estimates are affected by the state of public confidence in the business outlook; and public confidence tends to rise or fall cumulatively. This whole process is described with singular clearness and amenity by F. Lavington, in "The Trade Cycle." "Rising confidence," he says, "increases the supply of effective purchasing power, and increased purchasing power by raising prices gives a further impulse to the growth of confidence. The three are mutually related. Each reinforces the others and is reinforced by them."[4] This is no doubt true. Indeed, the three factors are so intricately and continuously related that it may seem academic to try to determine which is the most important. We are inclined, however, to give much less prominence than Mr. Lavington gives to the factor of confidence and much more to the factor of purchasing power, and this for the practical reason that fluctuations in the volume of purchasing power are much more amenable to sustained

public control, as well as for additional reasons which we may be able to explain by means of the author's analogy of the small boy who goes skating.

When the boy comes to a pond where many people are skating, he has no fears: parental warnings are forgotten. It does not occur to him that the larger the number of skaters, the greater is the risk. On the contrary, the more skaters there are, each apparently confident that the ice will sustain him, the greater is the confidence of all. Then comes a loud crack. Suddenly general confidence becomes general apprehension: fear is contagious and cumulative. The efforts of everybody to escape at once result in a panic. Similarly, when all business men seem to be extending their operations, placing larger orders, and bidding up prices, the confidence of each increases the confidence of all. It does not occur to them that the more there are who are skating on thin ice, the greater is the danger of a crack. When the crack does come, apprehension spreads quickly: the fear of each increases the fear of all. Then, in their sudden efforts to reach safe financial ground, they may bring on a panic.

This is a sound analogy, as far as it goes; but it does not warrant the conclusion that confidence is the main factor in sustaining a revival of business, or lack of confidence the main factor in prolonging a period of depression. We know perfectly well that not even the buoyant confidence of youth would enable the small boys to keep on gliding over the pond if the ice failed to do its part. We know, too, what most of the small boys would do, after the terrifying sound of the cracking ice had driven them ashore in a panic: they would try the ice again to see if there were really any cause for fear. If the crack in the ice proved to be a false alarm, fear would vanish and the skating would continue. Similarly, if business men were fearful that the

daily purchases of consumers would become insufficient to sustain business, and if consumers, nevertheless, kept right on buying, business men would soon get over their qualms, and business would go on as before.

It is true that confidence and rising prices and increased purchasing power have intricate causal relations: each sustains the others and is sustained by them. It is easy, however, to overestimate the importance of confidence. Confidence cannot continue to increase the purchasing power of consumers if the ratio of gold reserves or any other cause checks the growth of the actual volume of money in circulation, or the proportion of new money that reaches consumers; and a rise in prices cannot long continue without increased purchasing power of consumers. In short, prices and confidence cannot rise far without the support of continued increases in purchasing power; but continued increases in purchasing power, at least when a gold basis gives assurance of a definite limit of inflation, can continue to lift the levels of prices and confidence.

Commodity Markets the Center of Interest

Money is spent for services as well as for commodities, for dentists as well as for candy and toothpowder. We are not overlooking that fact. But, as far as business depressions are concerned, there are four reasons why we should focus our attention on commodities rather than on services. First and most important is the fact that more of the workers of the world are engaged in the production of commodities than in all other occupations combined. In the second place, unemployment is a far more serious problem among producers of commodities than among producers of services. This is due to the fact that the world can live for months on stored-up products, but it

cannot get along for a day on stored-up services. To-day's craving for candy can be satisfied from surplus stocks, while the men who made the candy are out of work; but to-day's toothache calls for the services of a dentist to-day. Consequently, industrial depressions begin in the markets for commodities rather than in the markets for services. In the third place, the maximum employment of those who make commodities seems to be prerequisite, in the long run, to the maximum employment of many of those who render services. It is the work of the butcher, the baker, and the candlestick-maker that enables society to employ the teacher, the butler, and the vaudeville star. Finally, payments for personal services are transfers of purchasing power between consumers. In themselves, they do not change either the volume of money offered for commodities or the volume of commodities offered for money. It does not necessarily make much difference to business as a whole whether a man spends a certain amount in consumption or in hiring a chauffeur who spends it in consumption. The total supply of commodities and the total demand for commodities remain the same. For all these reasons, business activity depends primarily upon the amount of money that is spent for commodities.

Standards of Living depend on Sustained Production

Standards of living depend on sustained production — not on low prices or high prices, low profits or high profits, low wages or high wages, low interest rates or high interest rates. Generally speaking, and apart from obvious qualifications, prices, profits, wages, and interest rates serve the economic interests of society in so far as they do their part in stimulating and maintaining production. Upon the continued operation of the going economic machine of

this year's model, most of us depend for the material comforts of life. "We may be mildly interested," as M. C. Rorty says, "in knowing what the 1930 or 1950 model of industrial machine is to be, but it is of downright serious importance to have a full gas tank and oil reservoir and all cylinders firing on this year's model. Furthermore, to continue the parallel, we are not half so much concerned with whether the machine will make sixty miles an hour on a level stretch, as we are with its ability to keep going, uphill and downhill, at an ordinary road speed and to come home at night under its own power."[5] The achievements of most men and women who are accounted successful are due, not so much to occasional strokes of genius, as to industrious persistence, year in and year out, in the pursuit of definite aims. We could get along very well without the brilliant spurts of business if it would only demonstrate a capacity for sustained effort.

The maximum productivity that is *continuously* possible is most likely to be maintained when there are no sharp fluctuations in the state of business activity. Under such conditions, therefore, business yields to mankind, year in and year out, the largest possible volume of consumable commodities — the largest means for maintaining a high standard of living. And that is what business is for. It is well to remind ourselves frequently that business as a whole exists, not for wages or profits, not for keeping men employed or keeping prices at certain levels — these are incidentals — but for the maximum production and distribution of goods. Further implications of this aim will appear in later chapters; for the present it is enough to bear in mind that the attainment of this aim requires first of all sustained production.

Producers' Commodities and Consumers' Commodities

If we are to understand the essentials of sustained production, we must distinguish between producers' commodities and consumers' commodities. By the latter, we mean those commodities the using up of which is an end in itself, as distinguished from those which are used up in the process of making other commodities. Thus, rubber and cotton, when used by a household merely for the satisfaction of the family, are consumers' commodities; but rubber and cotton, when used in a tire factory, are producers' commodities. The wearing out of a cotton loom is a part of the process of production; the wearing out of a cotton shirt is a part of the process of consumption. This classification — as we observed in the second chapter — is not logically precise and final: some commodities that are consumed by the individual for his own satisfaction — food, for example — add to his efficiency as a producer; some commodities — steel rails, for example — are used by consumers and producers at the same time. The distinction is adequate, however, for our present purposes; and, in accordance with this distinction, the terms "consumer," "consumption," and "consumers' commodities" will be used throughout this discussion.

In order that production may be sustained, the output of consumers' commodities must be taken off the retail markets at not far from the current price-level. Theoretically, the price-level could go up indefinitely and quickly without upsetting business; but actually, as the price-level goes up, money spent in consumption fails presently to keep pace with the supplies that arrive on retail markets. This is partly because in time it becomes necessary to stop expanding bank credit or to abandon the gold basis. In either case, business depression follows sooner or later.

It is equally true that the output of producers' commodities must be taken off the markets at not far from the current price-level; for we are concerned not only with consumers' expenditures, but also with the distribution of money between producers' markets and consumers' markets. Upon this relationship depends sustained activity in the wholesale wool trade as well as sustained activity in the retail clothing trade; and this is true of business as a whole. However, activity in the markets for producers' commodities as a whole is likely to be maintained if just enough money is continuously spent in consumption to dispose of finished products at current prices. For if there are no marked fluctuations in the effective demands of consumers, there are no incentives for producers as a whole greatly to curtail or to expand business. Consequently, we may well focus attention upon conditions that affect the amount of money spent in consumption.

It may be said that there is still another requirement for sustained production: there must not be an unbalancing of the distribution of demand among various branches of consumers' markets. That is to say, there must not be sudden changes in the character of demand. This, however, is a secondary requirement. It is true that, during a boom period, a few leading industries may fail to sell their output at the high prices that they must obtain because of high costs of production; and to some extent their difficulties may be passed on, through credit entanglements and unemployment, to many other industries. A cumulative process of liquidation and restricted buying, thus started, may help to spread trouble throughout the business world. This fact, however, need not discredit our emphasis upon the relation between consumers' incomes as a whole and the production of com-

modities as a whole: for it seems improbable that a number of leading industries, at the same time, would suddenly find themselves unable to sell *their* products, and quickly pass on their troubles to other industries, if the *total* consumers' demand remained sufficient to take away the *total* production at the current price-level. The needs and tastes of consumers, as a whole, do not change rapidly enough to bring about such violent changes in the character of consumers' demand. So long as consumers' incomes, as a whole, keep pace with production as a whole, it is difficult to see how a few leading industries could get themselves into such inextricable difficulties as to cause a general collapse of business. When a collapse does come, it is not mainly because troubles peculiar to wool markets or automobile markets *cause* troubles in other markets, but because of deficiencies in consumers' purchasing power *in general*, which naturally bring disaster first in one place and then in another.

Wages which facilitate Consumption

Still further to analyze the causes of fluctuations in the relation of consumers' demand to new consumers' commodities, we may distinguish between wages, like those of household servants, which are paid to facilitate consumption, and wages, like those of mill operatives, which are paid to facilitate production. Upon this distinction was based one of the popular propositions of the old lyceum — the question whether it is an advantage to society for men to employ, on their private estates, additional butlers, cooks, gardeners, and coachmen. The question was never fully answered, for it was not considered in connection with the state of business. Any change in the relative amounts paid to those who aid in production and to those who aid in consumption tends to change

the balance between commodities produced and commodities consumed. This is a change of immediate economic importance. Whether a proportionate increase in the total wages of those who aid consumption is good or bad for business depends on the state of business. When prices are falling, such an increase is good for business; when prices are rising, it is bad for business. Unfortunately for the interests of sustained production, payments to this class of workers fluctuate in the wrong direction. Chauffeurs, for example, are laid off precisely when business revival would be aided by additional unproductive consumers who spend money freely. Consequently, these fluctuations are an added stimulus to business when business is already overstimulated and an added depression to business when business is already overdepressed.

The Flow of Consumers' Incomes

The amount of money which will be spent in consumption in a given period of time depends largely upon the amount of money in the control of consumers and available for use in consumption. The flow of consumers' incomes is increased whenever there is an increase in the total volume of money in circulation. This total is increased when (1) additional metal comes from any source and is coined and placed in circulation, or (2) additional paper money is placed in circulation, with or without additional reserves, or (3) the volume of bank credit is increased. Bank credit, by far the largest of the three, is increased, for the most part, only when somebody borrows money for one of the following purposes: (1) for the payment of labor and materials needed in the production of goods; (2) for carrying stocks over to better markets; (3) for payment of debts; (4) for use in stock exchange

speculation; (5) for the extension of capital facilities; (6) for payment of wages, salaries, pensions, or bonuses to Government employees or beneficiaries; (7) in order that retailers may extend credit to their customers. It is important to bear in mind that most of the newly created money is first used in production or in speculation. It takes some time for it to reach consumers.

It is true that deposits subject to check are sometimes increased on account of loans for immediate use in consumption. To some extent, the borrowing of money by consumers on insurance policies and mortgages involves expansion of bank credit. It is clear, also, that the adoption of the Bonus Bill that was passed by the House of Representatives in 1922 would have increased consumers' incomes through the expansion of bank credit for loans to ex-soldiers. It is true, furthermore, that the money disbursed by European governments as pensions, bonuses, and doles is used at once mainly in consumption. Ordinarily, however, the total volume of bank loans for consumption purposes is exceedingly small compared with the total volume of loans for productive and speculative purposes. As a rule, therefore, consumers' incomes are only slightly increased by the expansion of bank credit before the new funds have first been used for non-consumption purposes. How long it takes for newly created money of any kind to get around to use in consumption, what factors determine the time taken by money in the circuit flow from consumer back to consumer, and what happens in the meantime to the price-level are questions which have not yet been adequately considered. That appears to be one reason why we have no adequate analysis of business cycles.

There is no Fixed Consumers' Fund

The conception of a flow of consumers' income will be misleading unless we guard against the error of thinking of this income as though it were a definite amount of money available for the purchase of consumers' goods and for nothing else. There is no such fund as this, any more than there is a wage fund in the old use of that term. The total current purchasing power is all the money in the hands of the people, in savings banks, or subject to check, or elsewhere, which is available for consumers' goods and services and for capital disbursements; but at no time is this grand total made up of a consumers' fund and a producers' fund, the one available only for the purchase of consumption goods and the other available only for the purchase of production goods. On the contrary, nearly every individual buyer has at least some option every day with reference to the proportion of money on hand that he will spend in consumption, the proportion that he will invest, and the proportion that he will retain in his pocket.

On the one hand, nearly all the money that is spent for producers' goods might be spent for consumers' goods: nearly every one who invests money in a lumber mill, either directly, or indirectly through buying bonds or stocks, or making deposits in banks, has the option of spending all or part of it for household furniture. On the other hand, in the United States at least, only a part of the money that *might* be spent in consumption *must* be so spent: virtually every one, if necessary, could save more money. Compared with what we daily buy and daily consume, the minimum requirements for sustaining life are small, as we know from the tragic experiences of Europe. The consumption of millions of people in Europe

has been reduced to half what it was before the War; and even before the War, the per capita consumption of the Continent was far below that of the United States. It is possible, therefore, permanently to curtail the average daily expenditure in the United States. Furthermore, it is possible for a short time to reduce current expenditures far below the amount which in the long run is a minimum requirement for consumers' commodities. We can wear our old clothes, postpone repairs on the house, and use up surplus food supplies. Consequently, there is at no time a fund of definite amount which *has* to be used in consumption, either at once or ultimately; nor is there at any time a fund of definite amount which we have any means of knowing *will* be used in consumption, either at once or ultimately. On the contrary, a large number of unmeasurable influences, mainly states of mind, are constantly at work, varying greatly in degree and even in direction, which determine what proportion of the consumers' income, in any given period, actually will be used in consumption.

"The Buyers' Strike"

This brings us to certain psychological aspects of the subject. Are not changes in the mental attitudes of consumers as important as changes in the size of consumers' incomes? Many people seem to think so. They contend that variations in the number of dollars that consumers have to spend is no more important than variations in their willingness to spend what they have. "All depressions," says John H. Van Deventer, "are at first psychological, in other words, caused by fear existing in the mind only. Fear causes a cessation of buying — not a reduction of buying power; the money to buy is at hand, but the buying stops. No depression is made permanent or

real until this fear leads to unemployment which does away with the money wherewith to buy." [6] The British consumer in 1920, according to C. H. Northcott, "manifested a psychological reaction against high prices. It is his refusal to buy that is the root of the slump in Great Britain." [7] The depression of 1921, in the United States, which is said to have resulted from a "Buyers' Strike," is also cited to show the importance of the state of mind of the consumer. At that time, it is said, millions of consumers, as a protest against "profiteering," refused to spend their money. This was a common explanation of the origin of the depression. In editorials and magazine articles, the decline in sales was generally attributed to a more or less concerted determination of final consumers to withhold their dollars because they thought prices were outrageously high.

Sufficient evidence to support this view is lacking. In the first place, the theory fails to explain why the buyers did not "strike" in 1919. Were they generally satisfied, at the end of 1919, with prices eighty-five per cent above the pre-war level, but pretty generally outraged, six months later, because in the meantime prices as a whole had risen about ten per cent? This does not sound reasonable. The "Buyers' Strike" explanation does not explain what we are most eager to understand; namely, why the depression came precisely when it did come.

Nor does this theory explain, in the second place, what became of all the money that the outraged buyers are said to have withheld from the market. Are we to suppose that they carried it in their pocketbooks in addition to the usual amounts? Only a small part of the depression could be accounted for in this way. Undoubtedly, there were some indignant citizens who refrained from buying certain articles solely in protest against the high prices

of those articles. One man, for example, refused to pay fifty dollars for a suit of clothes. What did he do with the fifty dollars? That is the main question. Did he spend it for a chair? If so, his action helps to explain the falling off in clothing sales, but does not help to prove that there was a general "Buyers' Strike." Indeed, there could have been no continued general depression if consumers' incomes had continued to grow at the same rate, and if all the money withheld from "profiteers" had been passed over the counters of other dealers.

In further support of the theory of the "Buyers' Strike," it is said that the dollars which were refused to merchants were turned over to savings banks or left in checking accounts. This explanation, however, fails us in two ways. It is faulty, first, because money turned over to savings banks is not long withdrawn from circulation. The most that can be said is that its use in consumption is delayed, because the greater part of it becomes available for consumers' goods only after the banks have loaned it to producers and they in turn have disbursed it in wages and in other payments. Thus its circuit time from consumption to consumption is lengthened. It is true, therefore, that depositing money in banks that would otherwise be spent in stores temporarily reduces the amount spent in consumption. But only temporarily. This explanation of the "Buyers' Strike" is faulty, in the second place, because in 1920 there were no increases in the volume of bank balances subject to check. On the contrary, total deposits fell.

Further evidence that the amount of money available for use in consumption is the chief factor in determining the amount that is actually spent in consumption is furnished by statistics of money in circulation compared with statistics for retail trade. During the years 1914 to

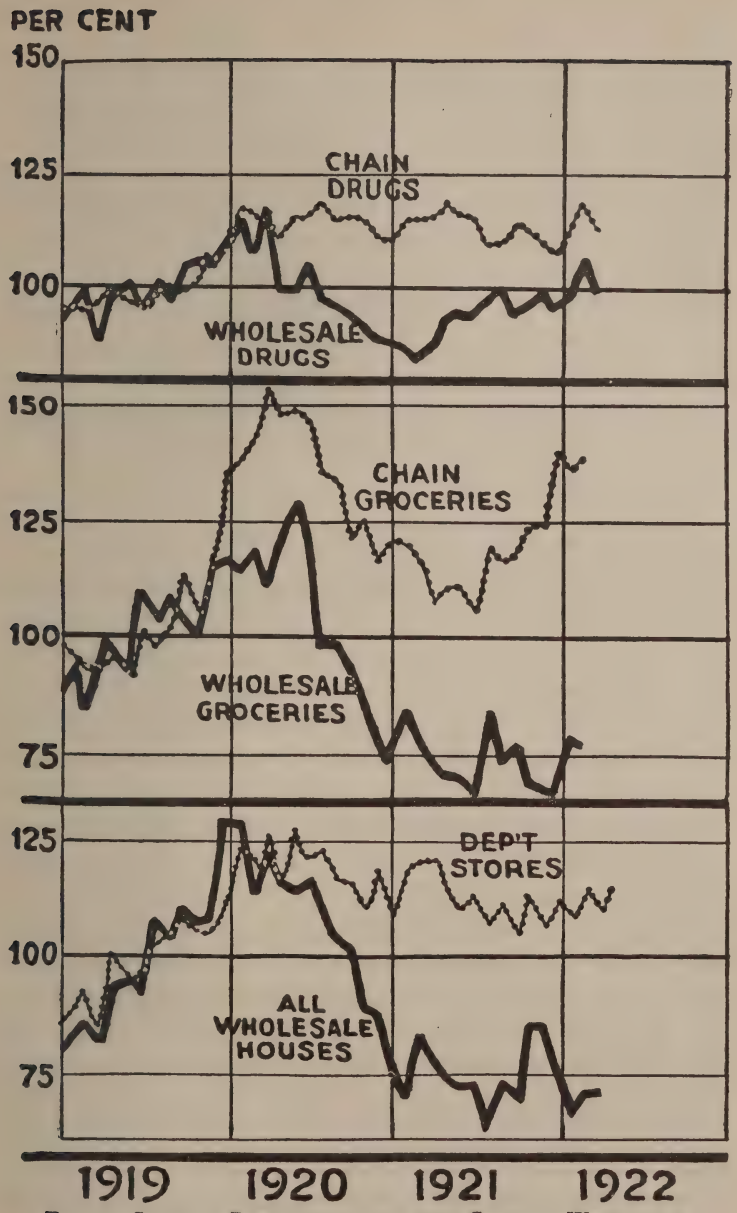

FIG. 13. SALES AT RETAIL COMPARED WITH SALES AT WHOLESALE 1919–1921

1921, fluctuations in the dollar-values of retail sales corresponded closely with fluctuations in the total amount of money in circulation. It is also worth noting that taxes from the sale of cigarettes, which toward the close of 1919 were in excess of fourteen million dollars a month, had fallen a year later below eleven million dollars a month. During the same period taxes on smoking and chewing tobacco fell from a monthly rate of about five millions to a rate of three millions. This decline in sales can hardly be attributed to a strike among smokers. It is more likely that sales of cigarettes and smoking and chewing tobacco serve as a fairly reliable measure of the rise and fall of consumers' incomes.

The Depression of 1920 not due to a "Buyers' Strike"

The "Buyers' Strike" explanation of the depression of 1920 falls short not only in these particulars, but also because the depression was not initiated by final consumers. That their purchases were fairly well sustained long after dealers had all but stopped buying is shown in Figure 13.[8] The dollar-value of retail sales in the second Federal Reserve district (New York) in the spring of 1921 was about the same as in the spring of 1920.[9] Retail sales were also well sustained in rural districts. The gross business of the Sears-Roebuck Company, for example, nearly all on a cash basis, was $254,000,000 in 1920. It was not until the fall of 1920 that the sales of this mail-order house slumped so seriously that new financing became necessary: in 1921 the gross business was only $178,000,000. It was the wholesale dealers who first reduced their orders to a minimum; and they did so, not as a protest against rising prices, but because they expected prices to fall. As soon as prices did begin to fall, dealers waited for the bottom. "When the crash came," says E. M. Herr, of the West-

inghouse Electric and Manufacturing Company, "we stopped all buying of all kinds." [10] This policy prevailed. This was the real buyers' strike: it was a postponing of buying by purchasing agents who expected lower prices. This movement went so far that many large producers telegraphed small orders, from day to day, for delivery by express, in order not to buy any more than was absolutely necessary on a falling market.

The farther we look into the depression of 1920, the clearer it becomes that the general decline in buying began with dealers rather than with consumers. It was due in the first instance to conditions which culminated in the curbing of the expansion of bank credit and the fear of a collapse of prices, rather than to any such concerted protest against high prices as might properly be called a buyers' strike. And the expansion of bank credit would have come to an end, even without pressure from the Federal Reserve Board; for lack of confidence in the future would have led to the withdrawing of bank deposits. It seems equally clear that the falling off in sales to final consumers, which was inconsiderable until later on, was due only in small measure to high prices, but mainly to lack of funds. People who want to buy and have no money should be compared with the unemployed rather than with strikers. The "Buyers' Strike" is one of those clever catch phrases which, like cartoons that appeal to the imagination, often pass current as proof of the point at issue and thus help to fasten a fallacy upon a nation. No doubt some final consumers with funds at hand refused to buy merely because prices seemed to them too high; but their refusal was a minor factor in the markets, and was insufficient to bring on a depression, as long as consumers' incomes were large enough to take away current production at prevailing prices and there was a widespread belief that prices would be still higher.

CHAPTER XVIII

THE CIRCUIT FLOW OF MONEY

SUSTAINED production, we have just observed, depends largely upon sustained daily expenditures for consumers' commodities. The volume of these expenditures depends mainly on the size of consumers' incomes. The size of these incomes depends mainly on the total volume of money in circulation. But this is not the only factor. The size of consumers' incomes is also determined in part by the frequency with which money, once spent in consumption, is returned to consumers; that is to say, the average time taken by money to make the circuit from expenditure by consumers through various uses back to another expenditure by consumers. The flow of money, therefore, from use in consumption to another use in consumption should not be overlooked in studies of the causes and conditions of business fluctuations. What we have come to call the business cycle is a composite of many cycles — cycles of wage rates, wholesale prices, farm rents, profits, volume of production, growth of capital facilities, and so on. Among these periodic movements are cyclical variations in the circuit flow of money. These we should study separately, while bearing in mind the fact that they are not the only important cyclical phenomena.

It is the purpose of this chapter to describe certain aspects of this circuit flow of money, to raise the question whether it does not deserve more attention than it has yet received in our analyses of business cycles, and to suggest pertinent lines of investigation. Unfortunately, the statistics upon which the most important conclu-

sions concerning this subject must be based are not at hand and are not likely to be for some time to come. The following discussion will have served its purpose if it stimulates further inquiry in profitable directions and helps to hasten the day when the necessary statistics are available.

The Circuit Flow of Money and Commodities

There are streams of commodities and streams of money which, in a literal sense, are constantly, though not steadily, moving in opposite directions. As Simon Newcomb long ago observed, "the influence of changes in the monetary circulation upon the well-being of the community is to be determined by their effects upon the industrial circulation." For the most part, raw materials are grown, extracted and graded, moved on to factories and prepared for final consumers, moved on to wholesalers, thence distributed to retailers, and finally turned over to consumers. At the same time, streams of money are moving in the opposite direction — a main stream becoming smaller and smaller as it flows from consumers to retailers, from retailers to wholesalers, from wholesalers to manufacturers, from manufacturers to producers of raw materials, and thence, mainly in the form of payments for personal services, back once more to consumers. This circuit movement characterizes the flow of money, but not the flow of commodities. When commodities get into the hands of the consumers, they are usually disposed of; thus they are withdrawn forever from the stream. On the contrary, most of the money that reaches the consumer is paid by him to retailers and to others; and thence it proceeds around the circuit.

The stream of money from use by consumers in the purchase of new goods back to another use by con-

sumers in the purchase of new goods, we shall call the "circuit flow of money." The average time taken by money in making this round through the various streams, we shall call the "circuit time of money." Its rate of flow we shall call the "circuit velocity of money." The circuit velocity is the reciprocal of the circuit time. If, for example, the circuit velocity is two times a year, the circuit time is one-half year.

The Velocity of Money

We are not now speaking of what economists call the "velocity of money." By that term, they mean the frequency with which money is used for any purpose whatever; that is, its turnover within a given period of time. Obviously, without due consideration of the velocity of money, no discussion of monetary problems is complete; for one dollar spent ten times, if spent on the same day and for the same purpose, has about the same effect as ten dollars spent once. "The nimble sixpence," says the proverb, "does the work of the slow shilling." [1] In any given period of time, the amount of money actually spent is the product of the quantity of money and its velocity. But before we can determine exactly how the movements of money affect business, we must consider certain phases of the circulation of money — particularly the circuit velocity of money — that may be as significant as the velocity of money as a whole. If the volume of new commodities moving into consumers' hands maintained a definite ratio to the total volume of commodities in circulation, the circuit velocity of money would tend to bear a definite ratio to the velocity of money as a whole. In that case we should have no special interest in the circuit velocity of money. But our entire discussion is based on the assumption that these definite ratios are

not maintained for any considerable time. We assume, on the contrary, that all periods of major business disturbances are characterized by an upsetting of the ratios that hold in times of relative business stability.

The equation of exchange which takes into account only the velocity of money in general takes no account (as we explained in Chapter X) of some of the specific causes of business fluctuations. For some purposes, the general equation $MV = \Sigma pq$ is not as useful as the equation $MC = \Sigma pq$, in which C is the circuit velocity of money.[2] We should consider separately changes in the velocity of money spent for consumers' commodities and changes in the velocity of money used in other ways. When, as in 1919 (see Figure 14)[3] bank deposits are turned over more rapidly in connection with increased sales on the New York Stock Market, there may or may not be a corresponding change in the turnover of bank deposits to pay for consumers' goods. Nor is money spent more frequently in retail markets merely because it is spent more frequently in wholesale markets. Money may work faster in order to pass woolen goods through more hands on their way to clothiers' shops, without passing more garments through the shops. In other words, additional middlemen may make use of money without making additional sales to consumers. Both velocity and quantity of money might remain constant — that is to say, people might have the same amount of money and spend it as rapidly as ever — and yet the markets might sense trouble. For if people decreased the amount spent for new goods within a given period of time, and to the same extent increased the amount spent in other ways, they would thus decrease the circuit velocity of money; and they might thereby temporarily depress business, without decreasing the velocity of money. Under cer-

tain conditions, therefore, the turnover of money as a whole may have less to do with business fluctuations

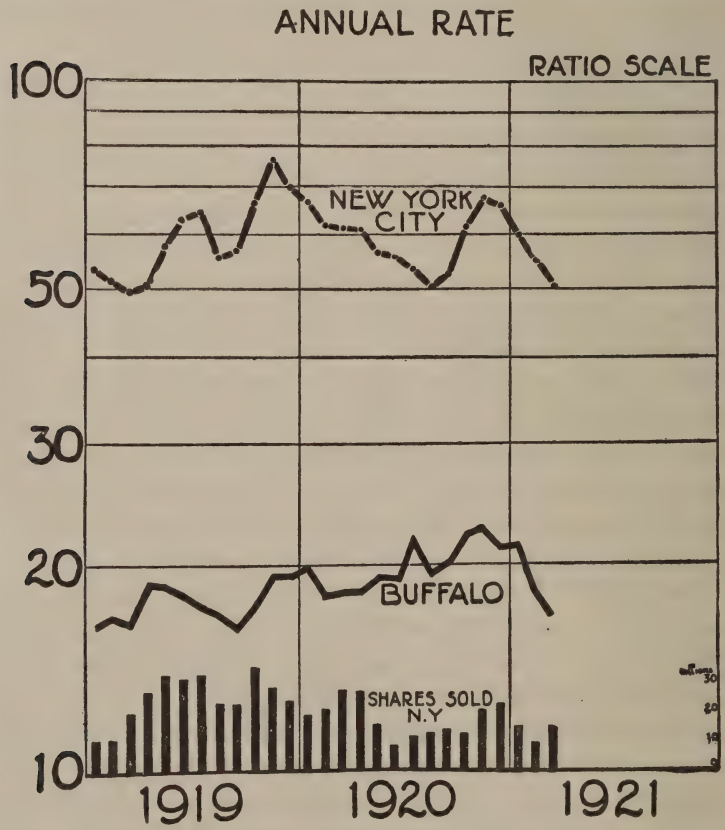

Fig. 14. Turnover of Bank Deposits

than the turnover of money in its particular function of moving goods into the hands of consumers.

It is manifestly impossible to predict the course which a given coin will take from use in consumption back to another use in consumption. Even if we knew exactly what course it had just taken, we could not know what

course it might next take; and it would be exceedingly difficult to find out. To follow accurately a single circuit of even a small part of our currency — our silver dollars, for instance — would require much of the time of the entire population and thus interfere with their circulation. We can, however, study the factors that tend to change the circuit velocity of money as a whole.

Within how long a period of time a volume of money equal to the total volume in circulation [4] will be spent by consumers depends upon the circuit time of money. In other words, whether the money spent in consumption is more or less than the total volume of money in existence depends on the length of the period we are considering. In a certain sense, it is true, all money is idle except when it is actually being used in exchange; but in that sense only one dollar out of many thousands is active, and all the rest are idle, in any given minute. It is only a matter of convenience which conception we employ. Either, if used consistently, leads us to the same conclusions as the other.

Diagram of the Flow of Money

The diagram on page 305, similar in plan and purpose to one devised by M. C. Rorty,[5] represents, in a general way, the circuit flow of money. To find fault with this diagram from an engineering standpoint would not be difficult; neither would it be sensible. All we should ask of these reservoirs and pipes is that they serve the purpose at hand. In the main, subject to certain qualifications to be made presently, this diagram does serve our present purpose. It shows what the flow of money would be if business and bank credit were perfectly stable.

The double reservoir at the top shows the amount of money in the hands of individuals and available for ex-

penditure in consumption. The reservoir is divided into two parts in order graphically to represent the fact that a part of the money received by individuals is income, most of which is spent in consumption; while a part is money received from the sale of real estate, bonds, and stocks, most of which is reinvested. The two parts of the reservoir, however, are connected with pipes, in order to take account of the fact that some income is invested and some money received from the sale of securities is spent in consumption. These connecting pipes are important. We must bear in mind that they are always partly, and never wholly, clogged. By their aid, we may visualize the fact, mentioned in the previous chapter, that we have no means of knowing how much of the consumers' incomes actually will be spent in consumption in any given period of time.

Into the right-hand section of the consumers' fund, three large pipes are emptying: one represents the large proportion of individual incomes, about seventy per cent, which is derived from personal services; the others represent the smaller proportion, about thirty per cent, derived from management and property, including rentals, royalties, interest, and dividends. These percentages are the averages, in round numbers, of the figures for 1909–1918, found in the admirable study of *Income in the United States*, published in 1921 by the National Bureau of Economic Research. The sizes of some of the pipes in the diagram, however, are based, necessarily, on much rougher estimates. No dependable study has yet been made of the proportions of individual incomes which are spent for new commodities, services, real estate, and investments.

Leading out of the reservoir of consumers' incomes are various pipes which represent expenditures for rent, taxes,

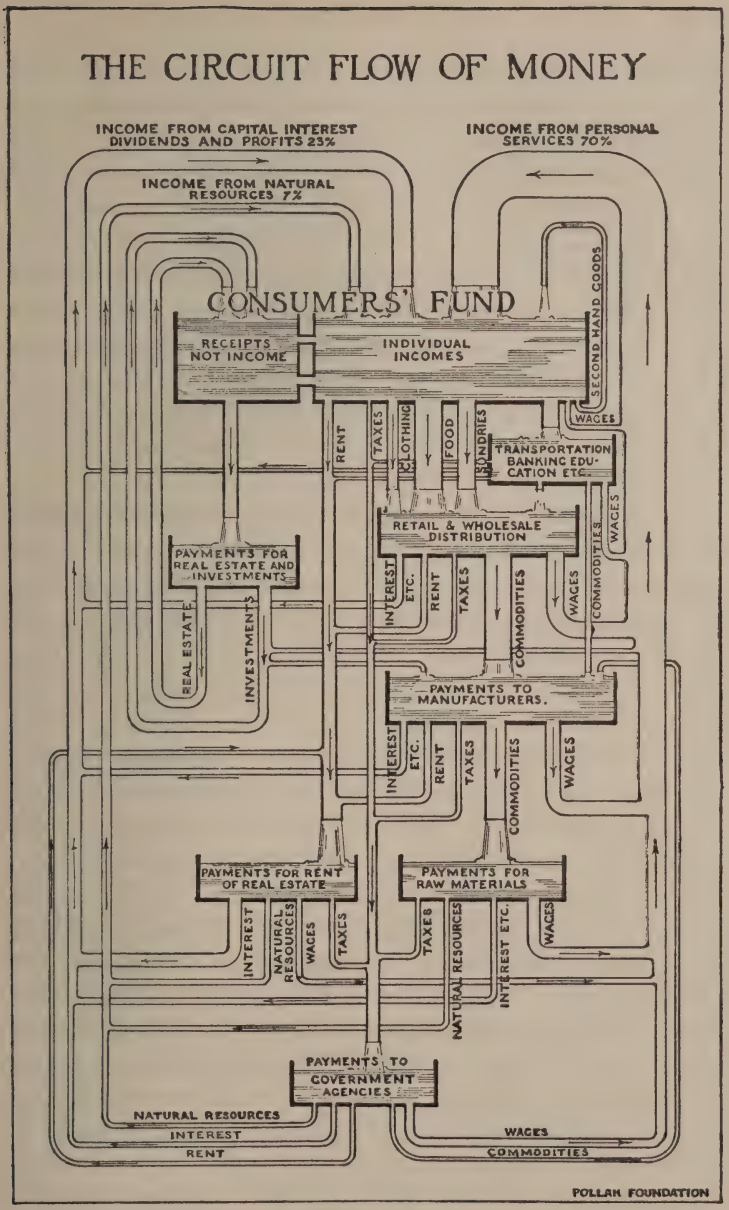
THE CIRCUIT FLOW OF MONEY
INCOME FROM CAPITAL INTEREST DIVIDENDS AND PROFITS 23%
INCOME FROM PERSONAL SERVICES 70%
INCOME FROM NATURAL RESOURCES 7%
CONSUMERS' FUND
RECEIPTS NOT INCOME
INDIVIDUAL INCOMES
SECOND HAND GOODS
WAGES
RENT
TAXES
CLOTHING
FOOD
SUNDRIES
TRANSPORTATION BANKING EDUCATION ETC.
RETAIL & WHOLESALE DISTRIBUTION
PAYMENTS FOR REAL ESTATE AND INVESTMENTS
REAL ESTATE
INVESTMENTS
INTEREST ETC.
RENT
TAXES
COMMODITIES
WAGES
PAYMENTS TO MANUFACTURERS.
PAYMENTS FOR RENT OF REAL ESTATE
PAYMENTS FOR RAW MATERIALS
INTEREST
NATURAL RESOURCES
WAGES
TAXES
INTEREST ETC.
PAYMENTS TO GOVERNMENT AGENCIES
NATURAL RESOURCES
INTEREST
RENT
WAGES
COMMODITIES
POLLAK FOUNDATION

FIGURE 15

clothes, food, sundries, and wages. The relative, estimated amounts spent for these various purposes are indicated approximately by the size of the pipes. It will be observed that most of the individual incomes are paid at once to those who are engaged in the distribution of finished commodities. These distributors, in turn, pay much of the money they receive directly to manufacturers, who, in turn, pay much of the money they receive directly to producers of raw materials. All along the way some of the money, mainly in the form of wages, profits, and interest, gets into the hands of individual consumers and is spent for consumers' goods, thus completing the circuit flow.

Some of the money completes the circuit quickly, some of it, slowly. As shown in the diagram, a part of the consumers' income is spent directly for personal services and a part is paid to individuals for second-hand automobiles and other "old commodities," and is thus passed directly from one consumer to another. Most of the money spent by consumers, however, takes a longer course before it finds its way back to consumers. Part of the money that is spent for new commodities — a pair of shoes, for example — goes to the wholesaler; part of that money goes to the manufacturer; part of that money goes to the tanner; part of that money goes to the farmer who raised the stock; part of that money goes to the producer of harvesting machinery; part of that money goes to mechanics in the factory, and is thus returned to consumers. During the circuit from consumer back to consumer, some of the money spent for the pair of shoes passed through more hands than in our illustration; some of it passed through fewer hands. The part that the retail shoe dealer paid immediately in weekly wages to his clerks made the circuit quickly. The part that was

set aside in cash as undivided profits of the shoe manufacturer may have taken a long time to make the circuit. It is the average time taken by all the money in the flow from one use in consumption to another use in consumption that we have called the circuit time of money.

The Flow of Money and the Flow of Commodities

Upon the rate of flow of money into the reservoir of personal incomes largely depends the even flow of commodities from producer to consumer. The stream of money is, in fact, a line of communication. Money has often been compared with roads. Adam Smith even went so far as to anticipate this age of aeroplanes: he called money "a sort of wagon way through the air." He emphasized the fact that money is unlike factories and stores. Rather, it is like railroads and telephones; for its function is not to produce or to exchange commodities, but to facilitate their production and exchange. It is only a means to an end.

Nevertheless, anything that happens to any of our lines of communication so as to disturb the even flow of commodities can retard production and distribution. At times some of our freight cars get side-tracked and lie idle; some get diverted from more essential to less essential uses. Now and then a bridge falls down and traffic is held up. Sometimes transportation facilities fail to meet increasing needs, as they did throughout the United States during the car shortage of 1920. Whatever thus prevents the orderly movement of commodities tends to prevent further production.

Similarly, whatever interferes with the monetary lines of communication — that is to say, whatever retards the even flow of money from consumers back to consumers — tends to retard the flow of commodities and thus to

disturb business as a whole. Some money gets sidetracked in hoards, in cash balances, even in banks, and is unemployed for an unusually long time; some money gets diverted at times from more essential to less essential uses. Now and then a bank fails, and there is a sudden stoppage of the trade movements that were dependent upon the tied-up funds of the bank. Sometimes consumers' incomes are increased out of proportion to increased production, as they were throughout the world in the years following the War. At other times, not enough money flows into consumers' hands to maintain the production-consumption equation: the volume of finished commodities increases more rapidly than the volume of consumers' expenditures. In short, whatever happens to the medium of exchange at once affects the whole industrial world in some way; whatever prevents the circulating purchasing power from moving commodities to final consumers interferes with further production.

Variations in the Rate of Flow

What it means to business to have variations in the rate of flow of money into consumers' hands may be seen if we continue to think of consumers' incomes as water in a vast reservoir. The simile need not mislead us if we keep in mind the fact that it proves nothing, and if we take care not to work it too hard even for illustration. Let us observe, then, that some of the water in the reservoir moves through conductors to the turbines of electrical plants, whence power is transmitted to distant cities where it moves street cars, lifts elevators, runs washing-machines, cures diseases, illuminates buildings, and in a thousand other ways sustains the activities of complicated modern life. Some of the water moves through irrigating ditches to innumerable farms where it

turns barren wastes into fields of wheat. Some of the water runs through mills where it moves machines that make the wheat into flour. Some of the water moves in river beds where it has its part in carrying the wheat and the flour from those who have a surplus to those who have none. Thus, at all times, a large part of this current supply of water is doing economic work.

At times, on the other hand, a part of this water supply has no share in production and distribution — does no economic work whatever. At times, some of it stays on the surface of the reservoir in the form of ice; it is seasonally unemployed. Some of the water, after turning the wheels of industry at one place, moves on down the river until it breaks through the bank and comes to a stop in a dead basin. Thus it is withdrawn from the channels of commerce; it can do no more economic work until somehow it is released and again set in motion. There is another portion of the supply in the reservoir that is completely lost to industry; it evaporates before it has been used in any way. And there is still another portion that evaporates along the routes of commerce, after it has played a part in the world's work. Whatever thus disappears by evaporation is subtracted from the current supply of power; the loss is made good only when the power is re-created, as it is when the rain falls and the water flows again into the reservoir.

Stability in production, as far as it depends on this water supply, is concerned only with *the rate of flow*. Nothing that happens to the water supply can upset production schedules provided the net result is an even flow of power, day in and day out, in the same channels, performing an unvarying amount of work. How much or how little of the water supply evaporates, or leaks from the pipes, or remains frozen in the reservoir, or is held

back in dead basins, is of no consequence, provided the total volume thus withheld from industry and its distribution remain the same. Only changes count. Until there are changes in the rate of flow, the work done will be plotted on the graphic chart as a straight line.

Similarly, business stability, as far as it depends on money, is concerned primarily with the rate of flow of money into consumers' hands. As far as stability is concerned, it does not necessarily make any difference how much money is in Government vaults, or is frozen in loans, or is idle in hoards, or is carried in pockets and tills as daily cash balances, provided the volume of money thus withheld and the volume of commodities coming upon the markets remain the same from day to day. Only changes count.

Business stability, to be sure, is not the be-all and the end-all of the economic organization of society. The supreme end is the satisfaction of human needs. The economic organization of society, in order progressively to adapt itself to larger human needs, must bring about a higher per capita production. But production cannot be sustained at higher levels without business stability.

At any and all times, a change in the circuit velocity of money tends to cause a change in the state of business. Whether the change is good or bad for business depends on the state of business at the time. This appears to be overlooked in much that is said about "economizing credit," "making money more efficient," and "bringing hoards out of hiding." It was an error, for example, while the general price-level was rising rapidly in 1919, to urge, in the interests of business, that higher rates of interest be paid for deposits in Postal Savings Banks in order to bring "a billion dollars out of hiding." The usual assumption seems to be that anything that increases the

velocity of money in general, or the amount spent by consumers, is advantageous to business in general. It may be good or bad for business. It all depends on economic conditions at the time and the nature of the transactions that are effected by the increased "efficiency" of money.

The Circuit Time of Money

How long does it take, on the average, for each dollar to make this round from one use in consumption to another use in consumption? What factors retard or accelerate the flow? What are the effects of these fluctuations on the state of business activity? What are the correlations between changes in the velocity of money and changes in the circuit velocity of money? We shall now venture to open up the discussion of these questions in a preliminary way, though it may be many years before research will answer these questions as definitely as they must be answered before any one can account in full for the ups and downs of business.

What is the circuit time of money? The available statistics are not a sufficient basis for an answer to this question. If we use Professor Fisher's estimate of the volume and velocity of money in the United States, in the year 1909, and if we then, from the estimate of the National Bureau of Economic Research for the income of that year, guess at the value of new goods bought by consumers, we arrive at an estimate of the circuit time of money.[6] If the total money transactions for that year were $400,000,000,000, and the total amount of money in circulation was $8,680,000,000, the average velocity of money was approximately 46. If consumers spent $20,000,000,000 for new commodities during that year, the circuit time of money was 8,680,000,000 divided by 20,000,000,000, which gives .434 years, or 158.4 days.

On the basis of these figures, the circuit velocity of money, the reciprocal of the circuit time of money, would be approximately 2.3. This would mean that for every dollar spent by a consumer for new commodities during 1909, approximately nineteen dollars were used for other transactions. That is to say, although each dollar was used about once in every eight days for some purpose or other, it was used only once in 158 days for the purpose of passing new commodities into the hands of consumers. But there is so much guessing in these figures that they are useful only for illustration. If the turnover of bank deposits subject to check is now twenty-five or thirty times a year, as estimated by the statistical division of the Federal Reserve Bank of New York, the figures for velocity in our illustration are far from right. Our research agencies, no doubt, will provide us some day with more dependable estimates than any now available for the velocity of money and for the annual expenditures of consumers for new commodities.

Defects in the Diagram

Evidently, in order to represent all the uses of money in the course of its journey from consumer back to consumer, we should need a much more complicated diagram. It would be so complicated, in fact, that without a vast amount of study it would be confusing rather than clarifying. For that reason, we have not shown many of the money movements of minor importance.

Nor have we shown all the movements that are of major importance. The reader has already observed, no doubt, that the diagram overlooks the fact that nearly all money, on its way from consumer to consumer, passes through banks. Up to this point, we have directed attention to the place in the circuit flow of money where it is

spent by consumers. We have made this the center of our interest because consumption is the end for which commodities are created; and because we wish to raise the question whether anything that happens to money in any other part of the circuit can cause a major disturbance in business, as long as just enough money continues to be spent in consumption to take away commodities without a change in the price-level. There is good reason, however, for paying special attention to that part of the circuit in which money flows through the banks; for it is literally true that most of the money that is spent in consumption begins and ends its career in a bank. When a farmer who is waiting for his wheat to mature applies to the bank for a loan of ten thousand dollars, the bank increases its deposits to that extent, minus the discount. The total volume of money in circulation is thereby increased. As soon as the farmer spends the money, it proceeds on its way around the circuit. In due time, if all goes well, the farmer sells his wheat and pays the loan at the bank, thereby reducing the amount of money in circulation by ten thousand dollars. Thus, in a sense, most of our money is created and extinguished in the banks.

It is sometimes said that the money is not extinguished by the payment of a loan, since, ordinarily, the bank is at liberty, the moment the loan is paid, to lend precisely the same amount to another borrower. The fact that the bank passes on the purchasing power by means of different pieces of paper is said to make no difference. When a bank loan is paid, however, the amount of the loan is actually withdrawn from the circuit flow of money; and an equal amount is returned to the stream only by a new joint act of the bank and a borrower. Unless we think of bank deposits as being thus created, and extinguished,

and re-created, we leave out of account one of the chief causes of fluctuations in consumers' incomes. If all the money that flowed into the banks flowed out again at a constant rate, the banks could be omitted from the diagram, because they would neither retard nor accelerate the flow of money to consumers. But the banks must be taken into account because they cause changes in both the quantity of money in circulation and in the circuit time of money. No diagram is complete which ignores these changes.

A similar defect in our diagram is the failure to make allowance for the action of the Government in changing the amount of money in circulation. Our system of reservoirs and pipes makes no provision for putting any more money into the stream or taking any money out. All the money flowing into the public treasury at the bottom of the page is represented as coming directly or indirectly from individual incomes. A complete diagram, however, would take account of the fact that governments — not infrequently, as the world has recently observed to its sorrow — coin money or print money or otherwise supply the deficiencies in the government reservoirs, whenever money is flowing out through expense conduits faster than it is flowing in through taxation conduits.

Factors that alter the Circuit Time of Money

Our next question is, What factors retard or accelerate the flow of money from consumer back to consumer? This question would not concern us if money actually flowed through the channels of commerce as steadily as in our diagram. Here we have pictured all the pipes as unobstructed, free from leaks, and unvarying in size. If the circuit flow of money were such, day in and day out, that we could accurately represent it by means of

such a simple and static picture, and if the flow of commodities were equally steady, industry would be perfectly stable. There would be no business cycles. But money never does flow through the arteries of trade as steadily as this. The rate of flow changes from time to time, often so slowly that the ordinary observer notices no change at all; sometimes so rapidly that nearly everybody is aware that something has happened, though there are few who know that it has happened to money, and nobody who knows exactly what it is that has happened to money. Furthermore, variations in the rate of flow come more rapidly in some parts of the circuit than in others. These facts might be suggested by means of gate-valves in all the pipes, subject to the control of individuals. Nothing but a motion picture, however, could show all these multifarious and kaleidoscopic changes. Our simple diagram can help us only in a general way to visualize the major movements. Not until we consider in what specific respects this diagram fails to depict what actually happens to money during the circuit are we likely fully to account for business instability.

We may now enumerate some of the causes that accelerate and some of the causes that retard the circuit flow of money, with a view to suggesting profitable fields of research. In making this enumeration, we shall assume, first, that the total money in circulation remains the same and, second, that the effect of each cause is not offset by the operation of other causes.

The circuit time of money is ordinarily decreased — that is to say, money moves around the circuit faster — under the following conditions:

(1) When there is an increase in the total amount paid as wages; since wage-earners spend a larger proportion of their money for goods than do other groups of consumers.[7]

(2) When taxes are decreased; since ordinarily money paid in taxes comes from consumers, but finds its way back slowly.

(3) When there is a general belief that prices are about to rise; for then it appears that the quicker we spend our money, the more we get for it. Consequently, we carry smaller average cash balances, and spend a larger proportion of our money for commodities.

(4) When there is general expectation of higher wages and higher profits; for at such times people spend money in consumption more freely.

(5) When people save less than usual; since thrifty people usually have on hand some money, intended for savings banks, which they have not yet deposited. As the total savings of the country decrease, there is a corresponding decrease in the amount of money that is waiting to be invested.

(6) When there is an increase in the amount of money borrowed, directly or indirectly, by consumers for use in consumption.

(7) When a larger proportion of exchanges are made by means of bank checks; since consumers who pay their bills by check are likely to make most of their payments soon after most of their income is received, usually on the first few days of the month, and there is therefore less need for keeping money on hand. Whereas people who pay all their bills with currency usually distribute their payments over longer periods of time; and, in order to do so, they carry larger average daily cash balances in proportion to their expenditures.

(8) When pay-days come more frequently. As a rule, those who sell their services or lend their money collect their pay at fixed intervals of time; and, as a rule, what they receive on one pay-day they spend before the next

pay-day. For the most part, wages that are received weekly are spent weekly; salaries that are received monthly are spent monthly; rents and dividends that are received quarterly are spent quarterly. All this in turn affects the receipts, and, therefore, the expenditures, of those who sell goods. Therefore, more frequent payments of wages, salaries, or dividends mean more rapid circulation of money from use in consumption back to use in consumption.

(9) When goods pass through fewer hands on the way to the consumer; because of the elimination of some of the middlemen, for example, through the vertical integration of industry.

(10) When there is a decrease in the amount of money used to transfer real estate, stocks, bonds, etc.; since money, while in use for such purposes, is not used in consumption.

(11) When the volume of undivided profits hitherto carried in the form of money is decreased.

Under all these conditions, ordinarily, the circuit flow of money is accelerated: under the opposite conditions, it is retarded.

The influence of most of these factors on the velocity of money has been considered by various writers, notably by Professor Irving Fisher, in *The Purchasing Power of Money*. But changes in these factors do not affect velocity and circuit velocity in the same degree or even, in all cases, in the same direction. How important these differences in degree and in direction may be, as factors in the price-level and in the state of business activity, we cannot tell without additional research. The last three, at least, of the conditions enumerated above appear to merit much further study.[8]

Throughout this enumeration we have assumed that

the total volume of money in circulation remains the same; whereas we are well aware of the fact that the volume does not remain exactly the same for any two days, and that, at times, the volume changes rapidly. To take this fact into account, however, we have only to change our conclusions slightly. Instead of saying, for example, that money flows faster when there is an increase in the total amount paid as wages, we must say "when there is an increase in the proportion disbursed as wages of the total volume in circulation." Similarly, we must make some of our other statements relative rather than absolute.

We cannot dismiss so easily our assumption that the effect of each cause is not offset by other causes. We are not at all sure, for instance, of the exact effect of increased taxes on undivided profits, or on wages, or on stock exchange transactions. We do know that the nature of the taxes will make a difference, and that we are not prepared fully to explain business fluctuations, or thoroughly to understand national monetary policies, until we have the aid of further research concerning the effects of various forms of taxation, under various conditions, on the circuit time of money. We need further research, as well, concerning fluctuations in the daily balances of individuals in pocket and in bank. Before we can determine the influence of these fluctuations at different stages of the business cycle, we must correlate them with fluctuations in wages, prices, unemployment, and volume of trade. We must also find the correlations among other factors that influence the circuit flow of money. One conclusion, however, we can safely draw without further investigation: there is virtually no chance that these variations in the factors enumerated above would counterbalance. The circuit time of money is constantly changing.

Conclusion

In order to forecast business fluctuations, or even to explain those that have already occurred, we should know more than we now know about conditions that determine fluctuations in the amount of money spent in consumption, including factors that alter the circuit time of money. How little we actually know is shown by the amazement among men generally over the way in which retail sales were sustained during the depression of 1921. Business as a whole was totally unprepared for the effective consumers' demand that continued after the slump in wholesale markets. Yet nothing magical happened. Every dollar spent by consumers came from somewhere, went somewhere, and left a record of some sort, nearly every time it was spent. These records, it is true, are not all that they should be. Measures of the flow of money through the various channels are not as comprehensive, or as accurate, or as detailed, or as readily available as we should make them. Yet even such records as we now have for 1921, if assembled, correlated, interpreted, and tested for error, by approved statistical methods, would undoubtedly go far toward explaining what appears to be a mysterious persistence of consumers' demand. Even without such records for 1921, the consumers' demand of that year might not have seemed at all mysterious, if similar records of previous business cycles, similarly interpreted, had been available and generally understood by leaders in commerce and finance. For it is probable that various forces that determined the volume of daily sales in 1921 operated in about the same way, in varying and measurable extents, as in previous periods of depression. It is possible, furthermore, that had we known, in the years following the War, as much as we might readily

have known about the circuit flow of money in previous years, in relation to the flow of consumers' commodities, there would have been neither the extreme business expansion of 1919 nor the disastrous contraction that followed. For the major causes of the expansion and the contraction were monetary and subject to human control in a far greater degree than has hitherto been deemed possible.[9]

CHAPTER XIX

THE ANNUAL PRODUCTION–CONSUMPTION EQUATION

Business as a whole will be sustained, obviously, if there is an exact and continuous correspondence between the dollar-sales of consumers' commodities and the output of these commodities measured in dollars at prevailing prices. In other words, business is sustained when people continue to use up commodities at the rate at which they are being prepared for use. But this unqualified truism does not take us far on our way to an explanation of business depressions. It goes without saying that in the course of time, except for such durable achievements as the pyramids and the Sphinx, men use up nearly all that they produce, and no more. If we take into account a sufficient number of years, it is true that "goods cannot be sold for consumption more rapidly than they are produced."[1] But time is the essence of our problem: for a time, goods *can* be sold for consumption more rapidly than they are produced. To keep business free from extreme fluctuations, production and consumption must balance within a sufficiently short period of time.

What is a sufficiently short period? That is a question that deserves more extended consideration than it has ever had, or can have here. For our present purposes, we need not be more precise than to say that variations in the state of business activity will be slight if the desired balance occurs within twelve months. Nature is responsible for annual business cycles. Because of those seasonal fluctuations, both in production and consumption, from

which there is no escape, the cycle of the year is the shortest period of time within which we might reasonably hope to approach closely to a balance of output and effective demand. This balance we may call the annual consumption-production equation. For convenience, we may call it simply the annual equation. If we are to avoid business booms and depressions, variations from this balanced condition must be small, and these variations must soon offset each other.

This is one reason why the Bonus Bill that was passed by the United States Congress in 1922, whether or not objectionable on other grounds, would have been bad for business at that time. Such a bill would mean an almost immediate increase of several hundred million dollars in bank deposits, provided the banks loaned money to the ex-service men as proposed in the bill. The greater part of this new money would be spent in consumption. This large and sudden increase of money, therefore, would take a large accumulation of finished goods off the markets. That would stimulate industry, lessen unemployment, and, after a while, increase the volume of production. So far, so good. But the immediate effect of a large increase in the money spent by consumers, with no simultaneous increase in the goods coming upon the markets, would be an increase in the price-level. In due time the full effect of the increased production would be felt in the markets; but at that time not all the "bonus" money originally spent would reappear as consumers' demand, nor would there be any assurance of another increase of money in the hands of consumers to match the larger volume of goods. On the contrary, the bank loans would have to be paid, and the volume of money in circulation would thus be reduced. This, in all probability, would mean a falling off in sales, a drop in the price-level, and a new period of

depression and unemployment. The net effect of the Bonus Bill, therefore, would be bad for business, and bad for consumers generally, including the ex-service men themselves.

Business instability is sometimes charged to the account of the "joy-riders" who consume but do not produce — those, for example, who adorn and amuse themselves by spending inherited money, or gains from speculation in stocks or in land. Among these non-productive consumers are many of the "conspicuous wasters" who are excoriated in Thorstein Veblen's *Theory of the Leisure Class*. But, however objectionable it may be to have any members of society appropriate for their personal use far more than they contribute to society, we cannot for that reason hold them directly responsible for fluctuations in the world's work. Their "joy-riding" cannot budge business as long as the amount they spend in consumption bears a constant relation to the other factors that determine the annual production-consumption equation. In this case, as in many others, changes are the center of interest. If non-producers spent much more than usual, they would tend to bid up prices and stimulate business: if they spent much less than usual, they would tend to lower prices and retard business. If most of them suddenly went to work, it would doubtless be good for them and for society; but it might not be immediately good for business, since there is no assurance that the products of their labor would be matched, soon enough and not too soon, with new consumers' dollars. "Joy-riders" are partly to blame for low production as well as for some of the indiscriminate condemnation of men of wealth; but not for business fluctuations. Business can be sustained just as well with a low, as with a high, per capita production.

Overproduction

It is with reference to the annual production-consumption equation that the term "overproduction" has its chief economic meaning. The misunderstanding of that term has been due largely to our failure to take into account the monetary complications of the subject.

The crudest of the misunderstandings of the term is still heard in denunciations of "heartless capitalists who speak glibly of overproduction when millions are in dire want." Obviously, production of goods in general over and above the *wants* of mankind is at present impossible: there is no known limit to human desires. The term "overproduction" is seldom used in this sense either by business men or by economists. They are aware that, throughout the history of the race, capacity for consuming with satisfaction has kept far ahead of capacity for producing. This is true of things in the aggregate: it is not true of certain specific commodities. The United States alone could produce more shoes than all the people in the world could find any use for; but the United States, even at its maximum production capacity, which is far greater than anything yet achieved, could not more than satisfy *all* the wants even of its own people. That there could be no overproduction in this sense seems self-evident; yet it is exactly this misconception concerning the meaning of the term that often arouses indignation toward those who talk about overproduction.

The traditional argument against the possibility of overproduction does not err in using the term with reference to human desires. It makes an error which is more serious because more subtle. How absurd it is — so runs the argument — to imagine that the supply of goods can possibly be greater than the demand for goods! As a

matter of fact, demand and supply are one and the same thing. Is it not clear that, when I drive to town with a load of hay, the hay is my demand for goods and at the same time another man's supply? I have added to demand and to supply exactly one load of hay: the balance between supply and demand remains precisely what it was before I drove into Haymarket Square. To be sure, I may sell the hay for money and then spend the money at the harness shop; but I must not allow the fundamental nature of the transaction to be obscured by a mere medium of exchange. I have only to imagine a state of barter to see clearly that nothing really matters in this transaction except its two commodity ends. I disposed of a load of hay; I acquired a new harness; what the intermediary happened to be in this transaction is of no consequence. It is true that I may find a distressing lot of hay already in the market; there may have been a bumper crop. Harnesses, however, which I want to take home with me, may be comparatively scarce. In that case, there has been a relative overproduction of hay. But obviously not all goods can be *relatively* overproduced. Consequently, there can be no such thing as general overproduction. This is the classical argument, typical of economic theory in overlooking the effects of money.

It is precisely this traditional attitude toward the "mere medium of exchange" that has diverted attention from the only possible kind of general overproduction. That not all goods can be overproduced in relation to each other is an axiom. If, therefore, we follow the instructions of some writers and consider nothing but goods, the idea of general overproduction seems absurd. If, on the other hand, we consider all that may happen to the medium of exchange, we see at once that there may readily be a general overproduction of goods in rela-

tion to the money which consumers offer in exchange for goods. That is to say, the annual equation may be upset. As a matter of fact, every business crisis is marked by this kind of overproduction.

Enough Money to do Business with

With this annual equation in mind as the basis of sustained production, we may ask the familiar question, How much money does business need? We know some of the answers that appear every day in newspapers, trade journals, and bank bulletins. We are told that "money must be responsive to the demands of trade"; that "currency must be sufficiently elastic to expand with the expansion of business"; that "we must have enough money to finance legitimate enterprises." Such answers evade the real issues by employing only vague and undefined phrases. The question "how much?" is not answered in full until it is answered in quantitative terms. It is confusing to talk in a general way about the "monetary needs of business," without reference to time, or markets, or prices.[2]

No monetary system can be sufficiently "elastic" and no volume of currency sufficiently large to satisfy everybody. Witness the current experience of Europe. In Russia, when the Government printing-presses made the world's production record of two hundred trillions of rubles per month, there was general complaint of "a dearth of currency." If we increased the money in the United States an hundred fold, many men would still complain that there was not enough money to do business with. That is because most men, naturally, answer the question only with reference to the condition of their own company, or their own industry, or their own section of the country; but the monetary needs of business as a

whole cannot be determined in this way. When employment is at its height and employers are bidding up wages in order to take workmen away from each other, some men are sure to need more money in order to do business. If a country were to issue more money whenever a particular company or industry or section felt hard pressed for funds, the country would be committed to an endless spiral of inflation.

The annual equation is maintained, we have observed, when in the course of the year purchases by consumers as a whole take away the finished goods at the annual rate of production. The closeness of our approach to this exact balance is measured, not by the condition of any one locality or any one market, certainly not by the varying fortunes of producers of wheat, or wool, or copper, or any other one commodity, but by variations in the general price-level. Whenever the general price-level for a series of years shows a high degree of stability, we know that the combined transactions of all markets are close to the annual equation. When that happens, the country as a whole has enough money to do business with.

The "Unbalanced State of Industry" Explanation

When that does not happen, the resultant business depression is commonly attributed to an unbalanced state of industry. There is said to be a law of equilibrium which works out a natural balance between the occupations, a balance that must be sustained in order that the products or services of each group may be absorbed by all the other groups. The example is cited of the discrepancies between the prices of farm products and the prices of manufactured goods during 1921. Business stability, it is said, can be maintained only so long as the equilibrium in industry permits various groups of workers to be mutually sup-

porting. We are told, in short, that "the secret of prosperity is in balanced industry."

This explanation of business depression does not carry us far beneath the surface of things. It leaves the deeper problems unanswered. Precisely what conditions must prevail if various groups of workers are to take each other's products off the markets? Precisely what are the fundamentals of a balanced state of industry? Once industry has become unbalanced, precisely what relationships are essential to the restoration of the balance? We do not answer these questions when we say that wages of printers must not be too high, that prices of farm products must not be too low, that retail prices must not be too far above wholesale prices, and that transportation charges must be in right relations to other business costs. Nor do we answer these questions with any greater precision when we say that "business must return to normal."

Evidently, sustained production does not require that the wages of certain groups of workers shall be in certain fixed relation to the wages of other groups, since we have had approximately the same degree of business stability in different countries where widely different discrepancies have prevailed between the wages in certain occupations and the wages in others, and since various groups of workers have been mutually supporting on one scale of wages at one time and on quite another scale of wages at another time. A similar comparison between different countries makes it equally clear that business stability does not depend on a fixed relationship between transportation cost and other costs. There appears to be no "natural balance" between occupations. It is difficult to find any law of equilibrium that determines how much higher the incomes of physicians must be than the incomes of printers in order that business may go steadily on. Nor

is there any evidence in economic history that there must be a certain relationship between the prices of farm products and the prices of factory products before business can proceed on an even keel. *Changes* in any of these relationships are, no doubt, disturbing factors. Once these changes have been made, however, it is not necessary to restore previous conditions in order to restore business stability: on the contrary, history furnishes ample evidence that the old balance of industry can be set up on new relationships. Nor is there any guarantee that a return to a former scale of incomes would mean a return to a former condition of business. There may be times when a return to former relationships should be urged for other reasons — in the interests of justice, perhaps, or social welfare, or increased production — but not as an essential of business stability.

The belief is widespread that there are normal price-levels, normal wages, normal profits, normal transportation costs, normal money rates, and so on, to which a country must return in time of depression before it can again enjoy the old conditions of balanced industry. This belief is based on error. At no time is it possible to find, in the statistical records of the past, a date when wages in general were "normal," or the wages of carpenters, or the relation between the wages of carpenters and farm-hands. Equally futile would be the effort to find the date when profits in the rubber industry were "normal," or call-money rates, or the price of potatoes. All our indices of wholesale prices, production, bond valuations, interest rates, volume of business, and so forth, necessarily adopt a purely arbitrary "normal." Certainly, there is no known normal in any of these fields upon which business stability depends. When it takes ten bushels of corn to buy a pair of shoes that two years

before could be bought for five bushels of corn, fewer pairs of shoes are bought. Instability follows in the shoe business; there is no doubt about that. But this does not mean that two years ago the exchange values of corn and shoes were "normal" in any useful sense of the word. Nor does it mean that business stability requires a return to the price-relations of that particular date.

Summary

In conclusion, we may summarize three respects in which this analysis of the fundamental conditions of sustained production goes beyond the so-called law of supply and demand, as it is usually expounded. The general statement that business is in equilibrium when the demand for goods equals the supply of goods does not definitely locate the causes of business booms and depressions, because it is not explicit concerning time, or markets, or prices. In the first place, we pointed out that it is not enough for demand in dollars to reach the markets in sufficient volume to match the commodities produced: to insure sustained production, the commodities and the dollars to match them must reach the markets within the same twelve months. In the second place, we noted the fact (in previous chapters) that it is not enough to consider merely the total dollar-demand for commodities at a given time: to insure sustained production, this demand must be rightly distributed between producers' and consumers' markets. In the third place, we observed that, although there is usually a demand "at a price," to insure sustained production, the demand must be at the current price. That is to say, in order to produce the desired equilibrium in business, demand in consumers' markets, at prevailing prices, must balance supply within a sufficiently short time. The balance of supply and de-

mand which meets these three conditions is what we have called the annual equation.

It follows that the relation of the amount of money spent in consumption to the commodities reaching consumers' markets within the same period is the main factor in the ups and downs of business. But the main factor in determining the amount that actually will be spent in consumption is, not mental attitudes, but the amount that consumers have at their disposal. Consequently, in times of falling prices and industrial depression, increases in the amount of money in the hands of consumers, up to the full amount necessary to move the accumulated goods at the current price-level, are economically advantageous: and, in times of industrial booms, increases in the amount of money in the hands of consumers up to, but not beyond, the full amount necessary to move the new goods at current prices, are economically advantageous. Out of all this, the conclusion follows that major fluctuations in business could be curbed if there could be sufficient control over fluctuations in the amount of money available for use in consumption. Some of the measures proposed for exercising this control, we shall consider in the next chapter.

CHAPTER XX

COSTS AND PROFITS IN RELATION TO THE ANNUAL EQUATION

THE balance of supply and demand, which we have called the annual production-consumption equation, is upset, according to certain theories,[1] whenever, with profits rising, too small a proportion of the national income is paid out in wages, and too large a proportion is absorbed in other costs of production or invested in new capital facilities. According to the theory of R. E. May, increased output due to the progress of the arts can be taken from the markets only if the money income of the people is increased and the prices of commodities are decreased. Crises are sure to come, therefore, if prices rise as the volume of production increases. As a means of prevention, Mr. May proposes a legal limitation of the rate of profits sufficient to bring about a decrease of prices commensurate with an increase of production.[2] A. Aftalion considers the cause of crises as inherent in capitalistic methods of production. When business men are optimistic, they build new factories and order new equipment. For a while all seems to be going well. Presently, however, the new capital facilities bring about an overstocked market, prices fall, and business is depressed. The Aftalion special contribution to the theory of business cycles is the idea that the break in prices is due to the fact that general overproduction diminishes the social use-values of commodities as a whole; but, according to his theory, undue expansion of the means of production is a basic cause of the trouble.[3] According to

M. Bouniatian, rising prices and rising profits tend to concentrate purchasing power in the hands of a comparatively few people. Their desire to consume does not keep pace with the growth of their income. At the same time, rising profits provide added incentives to further investment in the means of production. For these reasons, consumption does not keep up with the accumulation of capital and the production facilities in which the capital is invested. Presently, therefore, prices must fall and bring an end to prosperity.[4] A. Spiethoff finds the cause of crises in an ill-balanced development of industrial equipment and complementary goods. Rising profits induce men to invest heavily in new means of production. Presently, however, the slowing down of the demand for new capital goods and stringency in the money market combine to stop the upward movement of business.[5] Jean Lescure also ascribes business cycles to irregular activity in the development of capital facilities. This irregularity, in his view, is due to changes in the expected rate of profits.[6] However helpful these theories may be, they seem to us to fall short of explaining exactly what happens to consumers' demand, and the proposed remedies seem to us insufficient, because there is no adequate analysis of the relation of the circuit flow of money to the annual consumption-production equation.

Two Popular Current Theories

Among the most popular exponents of similar theories at the present time are the English economists, C. H. Douglas and J. A. Hobson. Both have an enthusiastic following. We agree with these writers and with their numerous disciples in attributing cyclical business depressions to the failure of money spent in consumption to take away commodities as they reach consumers' mark-

ets. Mr. Hobson is right in part when he contends "that the proper provision against trade depressions and unemployment lies in strengthening the consuming powers of the community, so that effective demand for consumable goods may keep full pace with every increased productivity that arises from improvements in the arts of industry."[7] By means of a different analysis, we have arrived at the same conclusion, though we feel obliged to add that the need is not always for a strengthening of consuming powers. Sometimes consumers' demand goes forward at such a rapid pace that it is riding to an inevitable fall. We agree, however, that during the past generation the volume of production and our standards of living have been lower than they might have been, partly because the time comes periodically when total production cannot be disposed of at prices that warrant producers to continue operations at the prevailing scale. But both the Douglas and the Hobson explanations of the cause of this phenomenon are to us unconvincing.

The "Discrepancy" between Wages and Market Prices

Both writers raise the question whether production is now financed in such a way as to place in the hands of consumers enough money to take away the current output of commodities at prevailing prices. Production is usually carried on for profit and usually profit is realized. This means that commodities are offered in the markets for more dollars than are paid to all those workers who aided in putting them on the markets. Consequently, as long as profits are made, the money disbursed to cover wages and other costs will not be sufficient to buy the commodities at prevailing prices. "In consequence of this," says C. H. Douglas, "the book-value of the world's production is continuously growing more and more in ex-

cess of the capacity to absorb and liquidate it, and every transaction between buyer and seller increases this discrepancy so long as the exchange takes place at a value in excess of the total wages, etc., which go to the various conversions of the product, with the result that a continuous rise in the cost of living absolutely *must* take place, apart and above that represented by currency inflation, palliated by intrinsically more efficient productive methods."[8]

Obviously, there is something the matter with this reasoning; for the result which the author declares *must* come from the specified causes has not always come. On the contrary, the cost of living — the cost in human effort — is much less than formerly. During periods of rising prices, it is true, wages lag behind the cost of living: during periods of falling prices, wages fall more slowly than prices. But considering the past century of production at a profit, during which prices have risen and fallen, we find that the real wages of a day's labor have increased.[9] To what has this gain been due? Partly, no doubt, to the fact that all adverse influences have been not merely "palliated," but more than offset, by increasingly efficient methods of production.

Nevertheless, the question under what conditions it is possible to produce commodities at a profit, and at the same time keep enough money flowing into consumers' hands to buy the commodities at current prices, cuts deeply into the major problems of business. The assertion of Major Douglas, that profit "represents depreciation, obsolescence, scrapped material, etc., all of which are charged to the consumer instead of being a charge against the value of the product," [10] seems to be beside the point. Necessarily, they are charged to the consumer; they would be so charged under socialism or communism;

and they always will be so charged, since we are not likely to invent machines that do not wear out or machines that cannot be supplanted by better ones. The balance between the selling price and the cost is the profit, no matter what enters into the cost; and the question whether a given enterprise puts enough purchasing power into circulation to take its products off the market at the going price does not depend on what the profit "represents." It does depend in part on what is done with the profits and when it is done.

The Douglas Theory

We are not sure that we have obtained a clear idea of the Douglas theory, either from the writings of Major Douglas or from the various followers who have undertaken to interpret his writings.[11] The core of that theory, as we understand it, is that there is no possibility of selling all the commodities that could be produced because our present monetary system does not bring into existence enough income to buy them. According to this theory, not only do we fall far, far short of our potential production because of lack of consumers' purchasing power, but, for the same reason, it is economically impossible to market all that is actually produced. It is impossible, we are told, because only a small part of the money that goes into costs of production, and which, therefore, in the long run must be included in retail prices, gets into the hands of consumers. And the assumption is at least implied that consumers never have any other way of obtaining enough money to buy the goods at these prices.

Price, says Major Douglas (in the least obscure of his explanations), cannot nominally be less than cost plus profit, but cost includes all that is spent in production. Therefore, cost includes not only all that is spent in con-

sumption (out of wages, salaries, and dividends), but also all that is spent in production, which also represents previous consumption. Since cost includes all this, a portion of the cost has already been paid by the recipients of wages, salaries, and dividends. These recipients are the community. Therefore, all the purchasing power that the community receives is the surplus wages and salaries and dividends that are available after all subsistence expenditure and costs of materials consumed in the process of production have been paid. Surplus production, however, includes all this expenditure in costs. All of which leads Major Douglas to conclude that "the only effective demand of the consumer is a few per cent of the price-value of commodities, and is cash credit. The remainder of the Home effective demand is loan credit, which is controlled by the banker, the financier, and the industrialist, in the interest of production with a financial objective, not in the interest of the ultimate consumer." [12]

It is not surprising that this theory has been eagerly accepted by large numbers of people, because no explanation of our economic difficulties is more popular than that which charges them all up indiscriminately to the administration of bank credit. It is not clear, however, that Major Douglas or any of his followers has offered an analysis of cost and profit that justifies their conclusions.

The most obvious comment on the Douglas argument is that it is inconsistent with the facts; for the results which we are told must follow from the assumed causes do not follow. If the consumer really had no other effective demand than a few per cent of the price-value of the commodities produced, the industrial order would not experience merely those recurrent setbacks which we have pictured in Figure 1: virtually all the processes of production and distribution would cease. Not only would a

large proportion of the population suffer from unemployment, but a still larger proportion would die of starvation. The fact that, decade after decade, consumers somehow manage to buy virtually all the goods that are produced at prices which cover both costs and profits discredits the conclusion that the consumers' only effective demand is but a few per cent of the price-value of commodities.

How does the Douglas argument arrive at this false conclusion? Precisely why is it, according to this argument, that most of the money involved in costs of production and accumulated in the retail price never reaches consumers' hands? For two reasons, we are told: first, because such costs as those due to overhead charges, factory account, and raw materials are met from the proceeds of bank loans, and these loans are made, not in order that consumers may buy commodities, but in order that the commodities may be produced. This is no reason at all. Due consideration of the circuit flow of money will show that wages paid to the machinists who make a printing-press and to the workers who supply the pulp for a paper mill flow into consumers' markets just as readily as wages paid to the typesetters in the composing-room of a newspaper. And they flow just as readily from bank loans as from any other source. All these "costs" are available to buy finished products.

As a second alleged reason why only a small part of the costs of production are available to buy the products, the Douglas argument contends that most of the wages, salaries, and dividends paid in connection with bringing a given consignment of consumables to market have been spent long before that consignment reaches the market. That is true. Only a trifling part of the wages that have been paid to all those who helped to produce this morning's newspaper are used to buy copies of the paper. But

this, as we have said in our discussion of "Money Advanced in Production," is the ordinary course of business. This is precisely how money flows through the myriad, intricate channels of trade. Nevertheless, as long as carpenters, clerks, and innumerable other workers continue to spend enough of *their* current income at the newsstands, the product of the printing-presses is bought. That is why there are times when the newspapers and all the other products of a country are bought by consumers, year after year, at just about the rate of production; and at such times all the forces are in operation which, according to the Douglas argument, render impossible that which actually happens.

The Hobson argument does not hold that so much money goes to pay these "costs" of production that there is not enough money in existence to buy the finished products at current prices. It holds that there *is* enough money, if rightly distributed, to buy all products at current prices; but that, whenever prices and profits rise, there is a lag in wages, with the result that too large a proportion of the money in existence goes to saving, in the form of new capital facilities, and too small a proportion to spending. Now, both these theories involve the tacit assumption that money is employed either for production or for consumption, and that once it is used for either purpose, we have no further interest in it. What subsequently becomes of the money? Once used for any purpose, how long does it take to reach consumers' markets? Only when we pursue these questions do we find the flaws in the arguments.

The Hobson Theory

It is the failure to take due account of these questions that seems to us to invalidate the central argument of

Mr. Hobson's *The Economics of Unemployment.* To account for trade depressions, says Mr. Hobson, "there is only one sort of maladjustment of economic forces adequate in nature and magnitude . . . viz., a normal tendency to apply to the production of capital-goods a proportion of the aggregate productive power that exceeds the proportion needed, in accordance with existing arts of industry, to supply the consumptive-goods which are purchased and consumed. In other words, if there exists a normal tendency to try to save and apply to capital purposes an excessive proportion of the general income, we have a valid explanation of the actual phenomena of fluctuations and depressions." [13]

The theory is further expounded in the following passage from *The Economics of Unemployment:* [14]

"I trace this failure, not to any lack of the monetary power to purchase all the commodities that could be produced, but to the refusal of those in possession of this power of purchase to apply enough of it in buying consumables, because they prefer to apply it to buying non-consumables, in other words, to buying capital-goods."

Let us consider this theory in connection with the upward swing of a business cycle. As prices rise in consumers' markets, profits increase faster than wages. Those who receive the profits invest a larger proportion of their incomes than formerly in producers' markets: that is to say, they increase their savings faster than their expenditures, and their savings take the form of new capital facilities. For this reason a smaller proportion than formerly of wages, rents, interest, and dividends is spent *at once* in consumers' markets. Therefore, we are told, the commodities that are produced cannot be sold at pre-

vailing prices, since these prices include increased profits which, having been diverted to the creation of new capital facilities, are not available for the purchase of consumers' commodities. Here we have the argument reduced to lowest terms.

Our first observation concerning it is that it is inconsistent with business experience. In time of war, for example, an extraordinary proportion of the national income is used for the construction of shipyards, munition factories, and other means of production. Presently these facilities lie idle, because they have been increased in excess of the demand for what they can produce. They correspond in all essentials to the forms of "over-saving" in time of peace to which Mr. Hobson ascribes the deficiency in consumers' purchasing power. But evidently the diversion of an unusual proportion of the national income in the United States to shipyards and munition factories during 1917 and 1918 did not cause a falling-off in consumers' demand: on the contrary, the demand increased by leaps and bounds, and continued to increase for nearly two years after the close of the War. Neither the fact that an increased proportion of our income was utilized for new capital goods, nor the fact that these facilities proved to be in excess of our needs, is sufficient to account for the eventual slump in retail markets.

Profits and the Circuit Flow of Money

The Hobson theory does not take fully into account the circuit flow of money. As a rule, money flows from one use in consumption back to another use in consumption: consequently, the mere fact that profits rise faster than wages does not prevent any money from reaching consumers' markets. Perhaps we can make this point clear by tracing the flow of a certain block of profits. Let us

suppose that they are invested in a new candy factory. For our present purpose, it does not matter whether these profits are realized on the sale of candy and put back into the business by the candy manufacturers, or distributed as dividends by various corporations and subsequently borrowed by the candy manufacturers. In either case, most of these profits go to wage-earners — to the workers who supply the bricks, lumber, and cement as well as to the bricklayers, carpenters, and masons who erect the building. Thus, most of the money reaches people who quickly spend in consumption nearly all that they receive. Some of the profits, however, which are used to build this new factory, are not at once paid out as wages, but become the profits of dealers and contractors. Even if we assume that they, themselves, spend none of these profits, but invest all in new capital goods — in motor trucks, for example — still most of these profits are paid as wages to those workers, all the way from the mines to the salesrooms, who had a part in making and distributing the trucks.

If we continue in this way to trace the course of the profits with which we started, we find that the fact that they were first used in producers' markets does not prevent a single dollar from being spent in consumers' markets. Money does not go out of circulation merely because, after it is distributed as profits, the profits are used to create new means of production. And if money continues in circulation, it is all spent presently in consumption, and flows thence to other uses. Neither the Douglas theory nor the Hobson theory follows the money far enough. Both theories seem at times to involve the assumption that money, once it is used in certain parts of the productive processes, is as effectively disposed of as fuel. They do not distinguish carefully enough between

the saws which are used up, once and for all, in a lumber mill, and the money which, like the falling water that runs the saws, merely passes through the mill on its way to do other economic work. It is true that on the way from consumer back to consumer, money sometimes goes out of existence: it is used to pay bank loans. The importance of this fact we have emphasized above, especially in Chapters XII and XIII. But money does not disappear from circulation for any of the reasons which these theories hit upon as the causes of business depressions. There is nothing either in the fact that cost includes all expenditure on product, or in the diversion of money to new capital facilities, which in itself prevents enough money from flowing into consumers' markets to take away current production at current prices. Consequently, both the Douglas theory and the Hobson theory fail to explain cyclical depressions or to suggest convincing remedies.

Mr. Hobson's Constructive Proposals

The shortcomings of the theory appear again in one of Mr. Hobson's constructive proposals. In order to reduce the wage-lag and thus reduce the volume of profits that are used to augment our productive resources, he says that the Government should take a larger share of the profits and build electric superstations, for example, or a Channel Tunnel.[15] Overlooking the more obvious objections to this plan, including the probability that increased Government expenditures would tend to decrease total production, we may consider the bearing of his proposal on his main thesis. What difference would it make in consumers' markets whether a given amount of money was disbursed as profits and invested by individuals in factories, or collected as taxes and used by the Govern-

ment to build a tunnel? Would it necessarily make any difference in either the supply or the demand side of the markets which way the money was employed? During the period of construction, neither the tunnel nor the factory would make any addition to the goods side of the annual production-consumption equation. Whether there was any addition after construction was completed would depend on the decisions made at that time. Factories do not produce goods or tunnels render services merely because they are built. Unless the prospects of demand seem satisfactory at the time production schedules are laid out, the existing capital facilities are not used to capacity.

Nor would it necessarily make any difference in consumers' demand — in the dollar side of the equation — whether the money went into a privately owned factory or into a publicly owned tunnel. In neither case is there anything to prevent all the money from flowing into consumers' markets. Whether it would make any difference in those markets depends on whether it would make any difference in the circuit time of money. Suppose we assume — an assumption that might well be contrary to fact — that the Government so employed the money, the first time it was used, that a larger proportion went into wages, and a smaller proportion into profits, than would be the case if the money were invested by private citizens. Even so, there is no certainty that the money would be spent any sooner to take away finished products. On the contrary, the Government might take so much time in collecting the taxes, in discussing the proposed expenditures, and in getting the work under way, that the money in question might reach consumers quicker through private channels, even though some of it had figured as profits several times on its way to consumers.

That is to say, the anticipated speeding-up of the circuit flow of money, due to an increase in the proportion of the currency and credit in circulation which is paid as wages, might not be realized because of the slowness with which the taxes reached pay envelopes and were thus returned to consumers.[16]

As another means of reducing the margin between wages and profits, Mr. Hobson maintains that as prices rise employers should increase wages more rapidly.[17] By what practical means are we to bring this about? The author does not say. Shall we jump to the naïve conclusion that, since the problem arises out of wrong relationships among wages, profits, and prices, the solution is Government regulation of wages, profits, and prices? Unfortunately, the way out is not so simple. Government regulation, as we have shown in our chapter on "Money and Prices," would be slow, erratic, costly, bungling, and unjust. Could we not, then, accomplish our purpose merely by requiring that wages shall increase as rapidly as profits? Not under the conditions which have prevailed in every industrial order that has worked; for there is no possibility of telling, at the time wages are paid, what the profits are going to be. Could we not at least require that all employers regulate their wage schedules in accordance with an index of the cost of living? Here, again, we meet the injustice and ineffectiveness of regulations that ignore the varying fortunes of business concerns. Rising prices affect different concerns, at different times, in infinitely different ways. The proposed regulation would ruin some producers and but slightly reduce the profits of others. As long as existing conditions permit sharp fluctuations in the price-level, it is impossible to prevent business depressions by means of Government regulation.

Both the Douglas theory and the Hobson theory, although neither writer endorses the theory of the other,[18] have been widely and warmly accepted. Naturally so; for many people take kindly to the idea that smaller profits and higher wages would cure our industrial ailments. Workers, no less than employers, are inclined to protect from the pains of rigorous criticism all arguments that lead to welcome conclusions. But when we examine these theories in the light of our analysis of monetary circulation — inadequate though it is — we are forced to the conclusion that, however palatable the remedies might be, they would not reach the causes of the disease. These theories do not lay hold of the factors that bring about recurrent deficiencies in consumers' purchasing power. Neither theory accounts for the deficiency at certain times or for the adequacy at other times. A study of our diagram of the circuit flow of money should make it evident that the factors which, according to these theories, are chiefly responsible for our troubles might remain, and we might still have a flow of money into consumers' markets sufficient to keep the goods flowing out at the current price-level: the annual production-consumption equation might still be maintained. The dominant economic factor in the spiral that culminates in a shortage of purchases in retail markets is a fluctuating price-level; but neither of these theories accounts for this factor or shows how to control it.

Profits and the Annual Equation

If consumers are to obtain enough money to buy the entire current output of commodities, without a change in the price-level, producers as a whole, including farmers, must in some way disburse enough money to equal the sale price of the commodities, and disburse it soon

enough. To do this they must disburse more money every year; for, to maintain the existing standard of living for a growing population, there must be increased production. But, if there is to be increased production without a change in the price-level, there must be an increased volume of currency and credit. Theoretically, it is true, a speeding-up of the circuit flow of money might maintain the price-level just as well as an increased volume of money. Actually, changes in the circuit time of money do not suffice for this purpose. Consequently, in order that the additional commodities may be purchased by consumers without a change in the price-level, there is the necessity, year after year, of adding to the volume of money. Nearly all this additional money must be provided, as business is now financed, by joint action of banks and producers.

Even if producers borrow money and make additional payments in wages, dividends, and so forth, equal to the sale price of their increased product, a part of this additional money will not reach consumers' markets as soon as the product. There may be, in consequence, an accumulation of unsold stocks until the new money has caught up with the new stocks; for those who make commodities and sell them at a profit do not disburse their profits at the time the commodities are produced, but only after they have been sold. Consequently, when enterprises begin to increase production, although at first they add dollar-demand to the markets and no commodities, later on they do not pay out an amount sufficient to cover the sale price of their products. If they continue, however, to pay out all the profits they receive by virtue of increased production, the time will come when the daily purchases will take away the increased output at current prices. This will be true only if there are no changes,

meanwhile, in the spending habits of the community sufficient to change the circuit time of money. If the individual consumers keep on hand larger cash balances, or spend a larger proportion of their incomes on services, the disbursing of all profits will not prevent a drop in the price-level.

The point we are here making is that, contrary to the assertions of several present-day writers, there is nothing in the production of commodities for sale at a profit which, in and of itself, prevents consumers from obtaining enough money to buy the commodities at the current price-level. This is true even when the total volume of commodities and the total volume of services are increasing. It is true even when profits increase at a faster rate than wages. It is equally true, though a larger proportion than usual of the profits is invested in new capital equipment.

On the other hand, no matter how readily loans may be obtained, our present systems of production and finance give no assurance that producers of commodities *will* borrow and place in circulation, as wages, interest, dividends, and so forth, the right amount of money, at the right time, to take their commodities off the markets at current prices. In other words, there is no necessary correlation between the amount of money which is actually borrowed to finance increased production within a given year and the amount of money which consumers must have in order to buy the additional commodities at the prevailing price-level.[19]

Before we can account fully for the effect of profits on the flow of money to consumers and the state of business activity, we must delve deeper into the subject than any of the explanations of business cycles that we have examined and deeper than we have gone in this chapter.

In *Costs and Profits*, which is Pollak Publication Number Three, some progress is made in the right direction. But there is much more work to be done. The Pollak Foundation hopes to undertake some of that work.

By way of summary, we may now enumerate some of the phases in the upward swing of business cycles that culminate in a deficiency of consumers' purchasing power:

In a period of depression, prices, profits, wages and the cost of doing business are low, and bank reserves are high. At the close of the period, stocks are low because dealers have been ordering only to cover day to day needs. The time comes, however, when the purchase of certain kinds of commodities cannot longer be postponed. About this time, dealers believe that prices have reached bottom. They increase their orders, cautiously at first. Manufacturers increase their output. There is a growth in the physical volume of trade.

At first, when the volume of production increases, wages reach consumers' markets as increased effective demand in advance of the increased supply of commodities.[20]

This stimulates a rise in prices which would otherwise come more slowly.

The rise in prices accelerates the buying movement.

Prices rise faster than wages.

For a while, partly because of increased bank loans, partly because of delays in delivery of commodities to markets, partly because of the speculative withholding of commodities,[21] enough money flows into consumers' hands to buy, at the higher price-level, enough commodities to sustain the orders of retail merchants.

Profits, however, rise faster than wages, and profits are

not distributed until after the commodities are sold upon which the profits are realized.

The time comes when the markets feel the full effects of the increased supply of commodities, but when the increased volume of purchasing power, due to the expansion of bank loans, is not sufficient to keep dollar-demand up with supply.

Then, there must be further expansion of bank loans or a fall in the price-level.

But, on account of reserve requirements, bank loans cannot expand indefinitely at a sufficiently rapid rate.

Furthermore, the eagerness to expand operations is curbed by the increased costs of doing business: wages, salaries, rent, and interest, which lagged behind profits, begin to catch up.

As soon as the banks, by raising the bank rates, indicate that the expansion of bank credit is approaching an end, speculators unload stocks, dealers diminish orders, and producers curtail production.

Prices stop rising.

As soon as prices stop rising, they begin to fall, since much of the business that has sprung up during the rise in prices depends for its existence upon a continued rise in prices.

Once prices begin to fall, many influences operate together to continue the movement, and a period of business depression ensues.

In this whole movement, the central factor is a changing volume of money flowing through various channels in such a way as to cause, or at least to make possible, changes in the annual equation and the price-level.

CHAPTER XXI

CONCLUSIONS

Our Economic Problems are chiefly Monetary

To the question raised in our opening pages, we have found but one answer: there cannot be intrinsically a more *significant* thing in the present economy of society than money. To insist that money is a superficial phenomenon is to overlook the central clue to economic mysteries. We could as profitably study telephony on the assumption that the electric current is of little account. Evidently, some of our historic economic structures, built as they are upon the idea that "money belongs to the higher complications of the subject,"[1] should be reconstructed around money as a framework. Again and again in our discussions, first from one point of view and then from another, we have been forced to that conclusion. So long as we have thought only of goods, and tried to conceive of modern trade as merely refined barter, we have arrived at no explanation of what goes on in business, no explanation of what periodically fails to go on in business. And so long as we have thought of money as a fund, we have made no progress. When, however, we have attempted to trace the flow of money from use in consumption to another use in consumption, and to measure the forces that retard or accelerate this flow, as well as the forces that change the volume, we have seen new light on the problem.

In this light, what shall we say of current doctrines concerning thrift, foreign trade, "easy money," tariffs, bonus

payments, farm loans, extra dividends, excess profits taxes, European debts, interest rates, reserve ratios, price regulation? Further discussion of all these matters would take us beyond our present purpose. But is it not already clear that current controversy concerning these subjects often overlooks the main issue? Is it not evident that in each case no policy is wholly satisfactory unless it serves to maintain the price-level and the production-consumption equation, by helping to equalize the flow of money into consumers' hands and the flow of commodities into consumers' markets?

Consider, for example, the meaning of thrift. We have come, as a nation, to look upon thrift as a cardinal virtue, and to think of thrift mainly as saving money instead of spending it. That has long been the teaching of most of our public schools. But is this kind of thrift always a national blessing? There seems to be some confusion on this point, for not long ago we had at the same time a National Buyers' Week and a National Thrift Campaign. The answer to our question is to be found neither in our traditional teaching concerning thrift, nor in the viewpoint of those who have goods to sell. Whether the people of any country should save more money or spend more money depends on the state of business. As the price-level begins to fall, they should spend more: as the price-level begins to rise, they should spend less. Unfortunately, they do the opposite: as prices rise, buyers rush in; as prices fall, they hold aloof.[2] Thus, they always make matters worse. Had the people of the United States, as a whole, spent more money during 1921, they would have saved more wealth. Had they taken due account of the relation of the circuit flow of money to economic welfare they might have revised their ideas, not only concerning thrift, but also concerning many other economic doctrines.

Economic Problems are not chiefly Moral Problems

Contrary to the contentions of many reformers, the root of economic problems is not moral. We can imagine a ship lost at sea, without officers or crew, a ship with mechanically perfect engines, ample supplies of fuel and oil, plenty of able-bodied passengers, with the best will in the world toward each other, and of one mind concerning the port they wish to reach. Yet we know that the machinery and good will would leave the passengers helpless, unless they knew how to run the ship. So it is in the world of business. Good will toward men is not enough. Often we are told that the root of our industrial troubles is greed, that all would be well with the world if captains of industry were inspired by the love of mankind; but when it comes to telling us exactly what to do in the concrete situations of everyday business, moralists are often silent, or vague, or absurd. No matter how earnestly men may desire to do unto others as they would have others do unto them, they cannot follow that golden rule when, in a given complicated situation, they are at a loss to know what they really would like to have others do unto them. The fact is that even in those unusual cases in which managers of industry have any real choice, they are often puzzled to know whether public welfare requires them to shut down factories or to continue producing goods that cannot be sold, to take the risks involved in borrowing money or to discharge workers. Those who are chiefly responsible for our commercial and financial policies do not bring down upon us the evils of inflation and deflation through design, but because they do not yet understand these movements, or know exactly what to do to prevent them.

Means of mitigating Fluctuations in the Price-Level

All our discussions concerning the characteristics of money have led us to the conclusion that the most significant — the one which does more than all others to obstruct economic progress — is its instability of value. Professor Fisher has proposed to stabilize the purchasing power of money by changing the weight of gold behind the dollar.[3] As the price-level goes up, he would increase the weight of the dollar, thus decreasing the volume of currency in circulation, thus tending to lower the price-level. As the price-level goes down, he would decrease the weight of the dollar, thus making possible an increase in the volume of currency in circulation, thus tending to raise the price-level. This plan gives rise to various questions. One of them we mentioned above. Under existing conditions, our markets periodically become so glutted that a change in prices is the quickest, available way out of what might otherwise become a deadlock between producers and consumers. The extent to which this glutted condition is itself due to changing price-levels, we do not know. The best plan we can devise at present must be tentative and flexible.

There is the further question how long it would take for a given change in the weight of the dollar to bring its purchasing power back to the desired level. All discussion of this question is necessarily speculative: nothing but experience could show exactly how long the "lag" would be between the corrective action and the desired effect. Some of the factors that affect this "lag" — enumerated in previous chapters — are not even considered in current discussions of methods for stabilizing prices. Yet, even now, some of them can be measured with sufficient accuracy to enable us to see that they must be taken into account.[4]

As Professor Fisher himself points out, it requires time for each adjustment of weight to produce the desired effect; and each adjustment must *follow* the change in the price-level which it is designed to neutralize. For these two reasons, if for no other, the plan could bring about only approximate stabilization. In any given year slight fluctuations would still be inevitable. Even during a period such as that from 1896 to 1914, when prices are rising not more than two per cent a year, changing the weight of the dollar in any given year might not prevent a change of two per cent in the price-level. However, if the plan could be effective throughout such a period, an increase of two per cent a year in the weight of the dollar would at least prevent the greater part of the *cumulative* increase in prices. Much more is to be said for "the compensated dollar" as a method of controlling the secular trend than as a method of controlling cyclical fluctuations.

Such a period, however, presents the problem of stabilization of monetary values only in its simplest form. Since 1914, we have discovered that under the Federal Reserve System wholesale prices can rise or fall a long distance in a single year. Apparently, it would be possible, at least for a year or two, for the expansion and contraction of the volume of bank deposits subject to check and the volume of Federal Reserve notes to counteract the effect of changing the weight of the gold dollar. The plan for altering the weight behind each dollar of currency does not take sufficient account of the fact that the price-level is affected by every dollar in circulation, by checks on bank deposits as well as by currency. The total of gold coin and bullion in the United States on the first of January, 1923, was less than four billion dollars, while the total amount of currency was more than eight

billion and the total of bank deposits subject to check more than twenty-five billion. And, since the volume of bank deposits subject to check and the volume of currency do not vary directly with the volume of gold coin and gold certificates, it would not always be possible even approximately to stabilize the price-level during a given year merely by changing the weight of gold in the dollar. By such a method we do not promptly reach that factor which, under the Federal Reserve System, and with our present reserve ratio, may at any time become the controlling factor.

Prices and Federal Reserve Board Policy

How, then, are we to control the volume of bank deposits subject to check in the interests of a stable price-level? The agency to which we might naturally look for such control is the Federal Reserve Board; but the Board has declared repeatedly that it is not concerned with fluctuating price-levels — that its policies should be formulated without reference to past or prospective changes in the purchasing power of the dollar. And the Board seems to have acted from the outset in accordance with its declared policy. If this is an error, it is one for which we should not hold the Board entirely responsible, since the provision in the Federal Reserve Act calling upon the Board to attempt to stabilize prices was stricken out before the Act was passed. Possibly, business men and farmers and laborers do not yet know enough about the relation of unstable money to their own troubles to be willing to have a small group of men, on their own initiative, undertake to control prices. Probably the Board should first have enabling legislation by Congress. However that may be, no one who accepts the conclusions of this volume concerning the monetary needs of business

can doubt that the dominant aim of any monetary system should be to moderate extreme fluctuations in the price-level. A stable money is "sound": a "sound money" is not necessarily stable. Setting aside questions of political expediency, and considering only the sustained economic well-being of the people as a whole, we must conclude that the chief financial agency of a nation, far from ignoring fluctuations in prices, should make them the center of interest. There is no service the Federal Reserve Board could render to this country — or, indeed, to the distracted countries of Europe — that would be comparable to its utmost efforts to stabilize the price-level in the United States.

How should the Board proceed in order to do as much as possible toward accomplishing this purpose? To answer that question definitely, we need more knowledge than we now possess concerning the relation of money to prices. The usual discussions of the quantity theory — the theory that the price-level varies directly with the volume of money, other factors remaining equal — leave us without the required knowledge concerning those other factors which, as we have seen, never do remain equal.[5] We must have more extensive quantitative and time studies of those other factors, correlated with each other and with changes in the quantity of money, before the Federal Reserve Board or any other agency can do as much as we may reasonably hope some day to do toward stabilizing the price-level. In particular we should know more about the numerous influences, mentioned in the previous chapters, which affect the relation between the flow of money into consumers' hands and the flow of commodities into consumers' markets. Without a clearer insight than we now possess, we could not reasonably expect by any method of control to attain more than a rough approximation to stable prices.

The Rediscount Rate an Insufficient Means of Control

That is all the Federal Reserve Board could attain by means of changes in the rate of rediscount; for the first steps toward inflation are not taken by the Board itself. The damage is done before the Board is called upon to act. At best the rate of rediscount is a tardy regulator. In any event, it may not check the expansion of deposits of commercial banks as long as those banks have plenty of money to lend without resort to the rediscount privilege. Furthermore, interest rates affect only the cyclical trend; they cannot control a long-trend movement of prices. Something more is needed. After the Board had made the best possible use of the rate of rediscount, how to stabilize the purchasing power of the dollar would still be to some extent an unsolved problem. Fluctuations in the volume of bank deposits and of Federal Reserve notes would still be determined largely by the independent acts of thousands of bankers, who know little about the effect of their acts upon business in general, and who, in any event, are necessarily and properly concerned mainly with the safety and profits of their own banks. Their policies in expanding loans and in contracting loans are not determined in the interest of stable prices. On the contrary, as we remarked at the close of our discussion of speculation,[6] bank credit expands most readily when prices are rising and contracts most readily when prices are falling, thus accelerating the movement of prices first upward and then downward. Inflation can take place even though loans are made, in the ordinary course of business, strictly in accordance with approved banking procedure, on tangible assets of unquestioned value:[7] and deflation can take place even when banks are fully meeting what they regard as "the legitimate demands of busi-

ness." Under our present system, therefore, even though the Board made what use it could of the rediscount rate as a price stabilizer, the country would still be without sufficient protection against fluctuations of prices in a given year and with no protection at all against fluctuations over a long term of years.

Nevertheless, the rediscount rate can always be used as a moderating influence. If employed promptly enough, it could have prevented the greater part of the rise of prices during 1919. The rediscount rate can curb inflation, however, only if it has the effect of curbing the expansion of currency and credit, and to be most effective the rate must be higher than the rates of the banks that do the largest business with the Reserve Banks. In other words, the rate must be such that there is no profit in borrowing from the Reserve Banks. On the other hand, if the rediscount rate is to curb deflation, the rate must be an adequate incentive to borrowers. As soon as prices begin to fall, therefore, the rediscount rate should fall below the bank rate. However, the question to what extent and under what conditions the rediscount rate can curb *deflation* requires further study. We can only say that if we had the most accurate and up-to-date index of prices that it is now possible to construct, and if, as the price index changed, changes in the rediscount rates were made *promptly enough*, most of the *extreme cyclical* movements of the price-level could be prevented. If changes in rediscount rates were thus made strictly in accordance with changes in the price-level, business men would know what to expect and could make future commitments with greater assurance. They would welcome such a definite and easily understood policy. They need it more than ever before. In the past, they have looked upon the reserve ratio and the automatic movements of gold in settlement

of international balances[8] as the best guides to discount policy. These guides are not safe to-day. That the reserve ratio is no longer a controlling factor is shown by the increase of rates early in 1923 by several of the Federal Reserve Banks when the reserve ratio was extraordinarily high. Business men now have no means of knowing what may happen to rediscount rates, or when, or why.[9]

Our Vast Gold Reserves offer a Unique Opportunity

With nearly four billions of gold, comprising more than one third of the monetary gold stocks of the world, the United States now has an unprecedented opportunity to attain a highly stable price-level, without changing the weight of gold in the dollar. A first step might well be to use all the gold as a reserve against currency, to make all currency legal tender and redeemable in gold, and to abolish all the useless distinctions — mainly relics of political compromises and monetary blunders — that survive in our "Money in Circulation."[10] We should then have, in addition to our subsidiary coins, only one kind of currency — United States notes. The volume of these notes in circulation could be increased promptly as the price-level fell and decreased promptly as the price-level rose. If an attempt were thus made to stabilize prices at their present level, it seems probable that our gold reserves would be sufficient to guarantee the convertibility of all the currency that would be needed under this plan, for at least a generation to come. We should still have "sound" money, and we should come much nearer to having stable money.

Under this plan, inflation due to expansion of bank deposits subject to check could be curbed shortly after it started, for any decrease in the volume of currency in circulation decreases the volume of bank deposits subject

to check that can be used to advantage.[11] Moreover, a reduction in the volume of circulating currency that was sufficient to check a rise in prices would remove the chief cause of excessive expansion of bank credit. On the other hand, whenever prices began to fall, the additions to the currency called for under this plan would tend to bring prices back and thus tend to increase the volume of bank credit. If, at the same time, changes in the rediscount rate were made solely with reference to changes in the price-level, there would be two powerful influences working together toward the same end, one directly affecting the volume of currency, the other directly affecting the volume of bank deposits.

Involved in this plan is the practical problem of getting currency into circulation and withdrawing it. But this surely involves no insuperable difficulties. It might be possible for the Government to accomplish this purpose by selling securities in the open market whenever prices began to rise and buying securities whenever prices began to fall.[12] Granted a widespread understanding of the supreme importance of the aim, and an agreement as to the general policy of curbing fluctuations in the price-level by means of changes in the volume of currency in circulation, a method could be devised that would go far toward achieving the aim. Refinements could come later. And they would have to come, as we have said, because we cannot achieve the highest attainable degree of stability of the price-level until we know more about money as suspended purchasing power; more about the time it would require for a given change in the volume of currency, brought about by a given method, to produce the desired result; and, especially, more about the factors that affect the flow of money into consumers' hands.

There is now no other equally good use to which we can

put these vast gold reserves, at home or abroad. At home, they are a menace to business. Unless measures are taken to prevent their use as a basis for further inflation, we have reason to expect a return to the hectic "prosperity" and high peaks of 1919, followed by another depression as disastrous as that of 1920 and 1921. Abroad, in those countries where our gold is most needed as a means of stabilizing currencies, there is no immediate prospect of having it used for that purpose. In the present demoralized condition of European currencies, there appears to be no way of sending gold to Europe with any likelihood that it will stay there and function as in pre-War times. Our gold reserves will best serve the immediate needs of the world, if they are used at home in such a way as to provide a fairly stable, gold price-level, which the whole world can use as a standard, and which is likely to remain a standard at least for a generation to come. A large part of the world is already making some use of the United States gold dollar as a measure of value. It would be much more useful if it were a dependable measure.

An Emergency Measure that might help

Even without enabling legislation and without delay, the Federal Reserve Board could set aside a billion dollars or more of gold as a "reserve against contingencies." [9] This special reserve might be earmarked "for export." In this way the Board could emphasize the fact that the time may come when this gold will best serve the economic world by being shipped abroad, and should not now be used as a basis for further inflation. Under this plan, the reserve ratio — reduced to 50 or even lower — would be a less urgent invitation to expand bank deposits. To be sure, most of the "easy money" advocates, in Congress and out, would know that this gold, even with a new

name and a new place in the Treasury reports, was still available as a basis for currency and credit expansion; and there would be just as many people who regarded their own need of more money as a sufficient "contingency" to demand expansion. Setting aside a part of the reserves in this way is not enough. Nevertheless, an official declaration of such a policy on the part of the Board might help to curb inflation now, and also help to convince the country of the need of a still more definite and more effective price-control policy.

How much Money does Business need?

In answer to the question how much money is enough to meet the needs of business, there have been innumerable answers. They have been amazingly diverse and often in direct contradiction of each other. Petty declared that a nation needed only "so much as will pay half a year's rent for all the lands of England and a quarter's rent of the Houseing, for a week's expense of all the people and about a quarter of the value of all the exported commodities." This estimate seems in our day about as scientific as the conjectures of medieval philosophers concerning the number of angels that could stand on the point of a needle. As late as the time of Locke, the estimates were equally crude. Locke, himself, thought that "one fiftieth of wages and one fourth of the landowner's income and one twentieth part of the broker's yearly returns in ready money will be enough to drive the trade of any country." In the eighteenth century, Cantillon came to the conclusion that the country needed enough money in value to equal a ninth of the total produce of the country or, what he estimated to be the same thing, a third of the rent of the land.

Underlying the development of currency and banking

systems in the United States has been the assumption that in the ordinary course of business there are sure to be wide variations in the volume of trade. Based on this assumption, there has been a persistent demand for a currency that is "sufficiently flexible to satisfy the legitimate changing demands of business." Frequently, as we have already remarked,[13] the cry is for "enough money to do business with"; often for "a credit system that is responsive to the fluctuating requirements of commerce"; and oftener still merely for "an elastic currency." This demand, in one form or another, appears regularly. The expressions of this demand, though many and various, have the common characteristic of vagueness: they deal with quantitative terms without quantitative precision. They do not grapple with the question "How much?" Nowhere do they offer us a reliable measure of "trade requirements" or of "the legitimate demands of business." Nowhere do they tell us by what means we are to determine precisely how much money, at any given time, will satisfy "legitimate demands." Some men insist that under our banking system there is no possibility of getting enough money in circulation. Others assume that our currency and bank credit are sure to have the proper degree of elasticity whenever expansion and contraction occur in the ordinary course of business.[14]

When, however, we use even such means as are now available for measuring our volume of business, we find that it does not vary greatly from year to year. Decade after decade, the volume of production in the United States has increased at an average rate not far from four per cent per annum.[15] And the volume of trade — except when speculative dealings are stimulated by increases of money out of proportion to increases of production, or when a period of depression ensues — varies at about the

same rate as the volume of production. The wide fluctuations in the state of business activity which we pictured in our opening chapter are not measures of changes in the volume of trade in consumers' markets. On the contrary, these extreme fluctuations in general business activity are themselves due chiefly to fluctuations in the volume of currency and bank credit which have taken place without reference to changing trade needs. We are justified, therefore, in concluding that an increase of about four per cent per annum in the total volume of currency and bank credit in circulation would come much nearer to satisfying the "legitimate needs of business" than increases which come about, as in 1915 to 1919, through the independent activities of thousands of banks and hundreds of thousands of their customers, operating under our present banking system. It seems not unlikely that if the Government put additional currency promptly into circulation as prices began to fall, and withdrew currency promptly as prices began to rise, the net result over a decade or two would be an increase of currency and credit in circulation at the average rate of not far from four per cent a year. If we used the best indexes that could be made both of prices and of production, probably it would make little difference, in a given decade, whether changes in the currency were based upon changes in prices or upon changes in the volume of production. For a few years, a combined index of prices and production might be used as a base, or a composite of various other weighted indexes. In the long run, however, the only safe guide to changes in the volume of currency is the price-level.

A century ago, Adam Smith commented on the fact that various writers had computed the amount of money needed by business as a tenth, a twentieth, and a thirtieth part of the whole value of the annual produce; and he

concluded that "it is impossible to determine the proportion." When he wrote, Adam Smith was right; for in his time there were no means of measuring the factors that determine the amount of money a nation needs. But now that we have fairly precise measures of the price-level, on the one hand, and the volume of employment and production on the other hand, we have the means of determining in a scientific manner how much money business needs. For, if we are right in our conclusion that the paramount monetary need of business, decade after decade, is a stable price-level, it follows that — once maximum employment and production have been attained — the amount of money required by business as a whole is the amount which will insure the highest attainable degree of stability of prices. Whatever amount will achieve this end is "enough money to do business with." More is too much — inflation: less is not enough — deflation.

At what Level should Prices be stabilized?

At what level should the attempt be made to stabilize prices? That is a question we now hear every day; but it is not the most pertinent question. The level matters little. As we said early in our discussions, business can proceed as steadily on one price-level as on any other level, once the change has been made, just as a ship can sail as serenely on Lake Superior as on the lower level of Lake Huron once it has passed through the locks. It is the process of changing levels and the frequency of the change that retard progress. The pertinent question is, In what stage of the business cycle should we attempt to stabilize prices? Certainly not at any stage in which the volume of employment and production can be increased by a rise in prices. We have noted the fact, however, that in the up-

ward swing of the cycle, the stage is reached, sooner or later, in which rising prices and rising wages cannot increase the volume of employment and actually decrease the volume of production.[16] No matter what the level of prices happens to be, therefore, it is the right time to attempt to stop further changes when employment and production have reached a maximum. How can we tell when that stage has been reached? From our available indexes of employment and our available indexes of production, we cannot tell exactly.[17] There is nothing, however, except a recognition of the importance of these measures, to prevent us from making them as nearly accurate as need be; and, compared with the losses we are seeking to prevent, the cost of perfecting these measures and keeping them up-to-date would be trifling. Even with the imperfect indexes at hand, it seemed probable, early in 1923, that further increases in the volume of currency and credit in circulation would prolong the period of rising prices, with its attendant evils and prospective collapse, without increasing the volume of employment and production.

Conclusion

Periodically, the economic organization of society proves defective: men, materials, and machines, ready to do their part, are not brought into such relations that they can go on with the world's work. This is the commonplace remark with which we opened our discussion of "Money." These recurrent business depressions, we observed, have caused economic losses in the United States greater than the incomes of all our millionaires, and losses other than economic of which we are all aware, but for which we have no measure. How to prevent these losses — how to keep our machinery moving at maximum pro-

ductivity and the products moving into consumption at the same rate — is *the* economic problem.

The problem can be solved.[18] There is no evidence that the alternation of prosperity and gloom is due, like the procession of the seasons, mainly to natural causes over which man has no control. Neither is it possible to discover any major influences, inherent in human nature or in the nature of business, that cannot be sufficiently moderated by human insight and decision. The chief factors in business fluctuations, as we have shown, can be measured with a high degree of precision and are much more amenable to human control than has seemed possible in the past. Dominant among these factors is money. But money cannot be controlled as it should be controlled until we know more about the exact ways in which it helps and hinders all the processes of production and distribution. In the present volume, we have done little more than analyze those characteristics of the established monetary economy which must be taken into account before it is possible for any one to discover how to keep the machinery going. Even this incomplete analysis, we hope, may have a part in stimulating others to think their way further into the intricacies of the problem.

THE END

APPENDIX

APPENDIX

NOTES TO ALL CHAPTERS

Chapter I

1. Figure 1 is based on a chart prepared by the American Telephone and Telegraph Company to show fluctuations in the state of business activity. This chart does not represent changes in the volume of trade. Statistics for bank clearings, postal receipts, long-distance telephone calls, and retail sales during 1921 (as Carl Snyder has pointed out) indicate that the total volume of business transactions for this year of depression was not much smaller — certainly not eight per cent smaller — than for the previous year. Nevertheless, the economic loss to society due to cyclical fluctuations in employment is far greater than statistics of the volume of trade would seem to indicate. Probably, Figure 1 does not make that loss appear any larger than it really is.

   "The Board of Trade statistics for this country give an average rate of unemployment amounting to little over 4 per cent for the trades brought under survey, and varying from somewhat below 2 per cent in 'boom' years to 10 per cent and over in depressions. But we have here no even approximate measure of the real waste of productive power. For, quite apart from the fact that unskilled labour, women's labour, and in general casual labour, where the wastes are greatest, do not count in their true proportions in the basis of the official figure, there are two wastes of immense and immeasurable magnitude of which no account is taken. To one I have already made allusion, the waste of capital, skill and labour normally involved in the practice of 'ca' canny' or slowing down of production, due to a fear on the part of employers of glutting the market, on the part of workmen of unemployment." (J. A. Hobson, *Economics of Unemployment*, London, 1922; pp. 24–25.)

   The close correspondence between volume of employment and volume of production has been shown by William A. Berridge, in his Pollak Prize Essay, *Cycles of Unemployment in the United States, 1903–1922.* (Pollak Publications, Number 4.)

2. Prices are treated as the core of economic theory in Professor H. J. Davenport's *The Economics of Enterprise*, one of the most stimulating and readable of all the general treatises. He says:

   "The problem of market price is the central and unifying problem of present-day economics."

"In its theoretical aspects, the science of economics is, indeed, but little more than a study of price and of its causes and its corollaries."

"The theory of price is thus the core of all economic theory; the rest is corollary or application."

"Men are essentially coöperative and interdependent in their productive activities; their antagonisms attach solely to the price aspects of the competitive system, its trading process, and manifest themselves in the effort to obtain through trading the most possible for the least possible." (H. J. Davenport, *The Economics of Enterprise*, New York, 1919; pp. 25–40.)

Another writer says: "Money is the pivot of everything in economics. We cannot move a single step towards the elucidation of any of its problems without first studying the nature and operation of the standard substance." (William Warrand Carlile, *The Evolution of Modern Money*, New York, 1901; p. 325.)

3. John Stuart Mill, *Principles of Political Economy*, Ashley's edition, New York, 1895; p. 6; p. 488.
4. The usual treatment of the functions of money is the one found in W. Stanley Jevons, *Money and the Mechanism of Exchange*, chap. III.

   The term "money," as explained in Chapter II, is employed throughout the present volume, in accordance with ordinary business usage, to include all forms of currency and bank credit.
5. Joseph F. Johnson, *Money and Currency*, Boston, 1905; p. 39.

   Dr. R. Estcourt says (in the *Annalist*, New York, December 18, 1922; p. 660): "The textbooks all go back to the history of the introduction of money as a medium of exchange and fail to distinguish between that fact and modern conditions. They treat the whole subject as if the conditions of a thousand years ago were still in operation. What is taught about money is quite correct, but it appertains to the history of finance and should be clearly shown to have no educational value except as history." John Raymond Cummings, says: "The science of astronomy was impossible until we learned that the earth revolves and the sun is the center. The science of money hitherto has been like the Ptolemaic system of the universe in its makeshift complications." (*Natural Money*, New York, 1912; p. 7.)
6. T. N. Carver, *Principles of Political Economy*, Boston, 1919; p. 292.
7. E. Levasseur, *Elements of Political Economy* (Translation by T. Marburg), New York, 1905; p. 185.
8. F. A. Fetter, *Economic Principles*, New York, 1915; p. 51.
9. J. R. Turner, *Introduction to Economics*, New York, 1919; p. 284.
10. F. T. Carlton, *Elementary Economics*, New York, 1920; p. 91.

11. Horace White, *Money and Banking* (fifth edition), Boston, 1911; p. 2; p. 9.
12. J. Laurence Laughlin, *Principles of Money*, New York, 1903; p. 536.
13. H. J. Davenport, *The Economics of Enterprise*, New York, 1919; p. 4.
14. Henry Clay, *Economics for the General Reader* (American edition), New York, 1918; p. 188.
15. Hugo Bilgram and L. E. Levy, *The Causes of Business Depressions*, Philadelphia, 1919; p. 38; p. 53.
16. F. A. Fetter, *American Economic Review*, December, 1920; p. 724.
17. Wesley C. Mitchell, "The Rôle of Money in Economic Theory," in the *Proceedings* of the Twenty-Seventh Annual Meeting of the American Economic Association.
18. Alfred Marshall, *Principles of Economics* (seventh edition), London, 1916, p. 782.
19. R. G. Hawtrey, in *The Economic Journal*, London, September, 1922; p. 298.

Chapter II

1. Joseph F. Johnson, *Money and Currency*, Boston, 1914; p. 6.
2. J. Shield Nicholson, *Money and Monetary Problems* (sixth edition), London, 1900; p. 108.
3. "Much ingenuity has been spent upon attempts to define the term money. . . . All such attempts at definition seem to me to involve the logical blunder of supposing that we may, by settling the meaning of a single word, avoid all the complex differences and various conditions of many things, each requiring its own definition. Bullion, standard coin, token coin, convertible and inconvertible notes, legal tender and not legal tender, cheques of several kinds, mercantile bills, exchequer bills, stock certificates, etc., are all things capable of being received in payment of a debt, if the debtor is willing to pay and the creditor to receive them; but they are, nevertheless, different kinds of things. By calling some money and some not, we do not save ourselves from the consideration of their complex legal and economical differences." (W. Stanley Jevons, *Money and the Mechanism of Exchange*, New York, 1892; p. 248.)
4. The operation of the Federal Reserve System is explained in *Banking and Business*, H. Parker Willis and George W. Edwards, New York, 1922; chap. XXVI.

   According to the report of the United States Treasury Department, the total stock of monetary gold and currency in the United States (as the term "currency" is used in this book) was as follows on the first of January, 1923:

UNITED STATES CIRCULATION STATEMENT — JANUARY 1, 1923.

(*In millions of dollars*)

KIND OF MONEY	TOTAL STOCK OF MONEY	MONEY HELD IN THE TREASURY				
		Total	Amount held against Certificates	Reserve against United States Notes	Held for Federal Reserve Banks	All other money
Gold Coin and Bullion	$3,933	$3,284	$708	$152	$2,235	$187
Gold Certificates	708	.....	.....	.....	.....	.....
Standard Silver Dollars	441	373	345	.....	.....	27
Silver Certificates	344	.....	.....	.....	.....	.....
Treasury Notes of 1890	1	.....	.....	.....	.....	.....
Subsidiary Silver	269	12	.....	.....	.....	12
United States Notes	346	3	.....	.....	.....	3
Federal Reserve Notes	2,817	2	.....	.....	.....	2
Federal Reserve Bank Notes	43	1	.....	.....	.....	1
National Bank Notes	762	17	.....	.....	.....	17
Total January 1, 1923	8,614	3,696	1,053	152	2,235	253
Comparative totals:						
December 1, 1922	$8,482	$3,677	$1,019	$152	$2,215	$289
January 1, 1922	8,282	3,351	990	152	1,933	274
April 1, 1917	5,312	2,942	2,684	152	.....	105
July 1, 1914	3,738	1,843	1,507	150	.....	186
January 1, 1879	1,007	212	21	100	.....	90

KIND OF MONEY	MONEY OUTSIDE THE TREASURY				Population (Estimated)
	Total	Held by Federal Reserve Banks	In Circulation		
			Amount	Per capita	
Gold Coin and Bullion	$649	$219	$429	$3.88	.....
Gold Certificates	708	405	302	2.74	.....
Standard Silver Dollars	68	6	61	.56	.....
Silver Certificates	344	55	288	2.61	.....
Treasury Notes of 1890	1	.....	1	.01	.....
Subsidiary Silver	256	10	245	2.23	.....
United States Notes	342	56	286	2.59	.....
Federal Reserve Notes	2,814	441	2,372	21.46	.....
Federal Reserve Bank Notes	42	5	36	.33	.....
National Bank Notes	744	36	707	6.40	.....
Total January 1, 1923	5,972	1,239	4,732	42.81	110
Comparative totals:					
December 1, 1922	$5,824	$1,208	$4,616	$41.80	110
January 1, 1922	5,920	1,399	4,521	41.51	108
April 1, 1917	5,053	953	4,100	39.54	103
July 1, 1914	3,402	.....	3,402	34.35	99
January 1, 1879	816	.....	816	16.92	48

NOTE. Gold certificates are secured dollar for dollar by gold held in the Treasury for their redemption; silver certificates are secured dollar for dollar by standard silver dollars held in

the Treasury for their redemption; United States notes are secured by a gold reserve of $152,979,025.63 held in the Treasury. This reserve fund may also be used for the redemption of Treasury notes of 1890, which are also secured dollar for dollar by standard silver dollars, held in the Treasury. Federal Reserve notes are obligations of the United States and a first lien on all the assets of the issuing Federal Reserve bank. Federal Reserve notes are secured by the deposit with Federal Reserve agents of a like amount of gold or of gold and such discounted or purchased paper as is eligible under the terms of the Federal Reserve Act. Federal Reserve banks must maintain a gold reserve of at least 40 per cent, including the gold redemption fund which must be deposited with the United States Treasurer, against Federal Reserve notes in actual circulation. Federal Reserve bank notes and National bank notes are secured by United States Government obligations, and a 5 per cent fund for their redemption is required to be maintained with the Treasurer of the United States in gold or lawful money.

Chapter III

1. Henry Clay, *Economics for the General Reader* (American edition), New York, 1918; p. 153.
2. Henry R. Seager, *Introduction to Economics* (third edition), New York, 1905; p. 7.
3. Edwin R. A. Seligman, *Principles of Economics* (eighth edition), New York, 1919.
4. H. G. Moulton, *The Financial Organization of Society*, Chicago, 1920; p. 743.

   "The pecuniary unit of calculation, together with the medium of exchange and the standard of deferred payments, have not only made possible but have been responsible for the development of our large scale coöperative exchange society."
5. R. H. Patterson, *The New Golden Age*, Edinburgh, 1882; vol. I.
6. Verney L. Cameron, *All Across Africa*, vol. I. See, also, W. Stanley Jevons, *Money and the Mechanism of Exchange*, New York, 1892; p. 1.
7. H. J. Davenport, *Economics of Enterprise*, New York, 1919; p. 237.
8. *Ibid.*
9. B. M. Anderson, Jr., *The Value of Money*, New York, 1917; p. 197.
10. *Ibid.*, p. 201.
11. See Chapter X, below.
12. *The Electrical World* (November 4, 1922; p. 1011) says: "In some parts of Germany the inhabitants have, as a result of the demoralization of the currency, reverted to barter in business transactions. This tendency is said to have reached even the electric supply companies, and at Auma, a fairly populous village, the Saxon Thuringian Power Company has announced its willingness to accept, instead of cash, ten eggs, 3 pounds of wheat flour or quarter of a centner (about 27 pounds) of potatoes for each kilowatt-hour of electricity consumed." Needless to say, this is a cumbersome and costly resort of business, in a country where the Government has all but destroyed the usefulness of money as a medium of exchange.

Chapter IV

1. Joseph Szebenyei, *Atlantic Monthly*, March, 1922.
2. Readers of economic textbooks are sometimes led to overlook the importance of the instability of money by such sentences as the following:

"We may throughout this volume neglect possible changes in the general purchasing power of money." (Alfred Marshall, *Principles of Economics* (seventh edition), London, 1916; p. 62.)

Money is "the only commodity of which we may say that its abundance or scarcity is a matter of perfect indifference." (Charles Gide, *Principles of Political Economy*, Boston, 1904; p. 220.)

"Gold and silver . . . are generally desired, independently of their money use. . . . This fact gives them security and stability of value." (Richard T. Ely, *Elementary Principles of Economics*, New York, 1904; p. 228.)

"Credit furnishes for currency the only element of ready adaptability. It furnishes, for ordinary conditions, the guaranty of steady market prices." (H. J. Davenport, *Economics of Enterprise*, New York, 1919; p. 282.)

"Another reason why money is usually preferred as a medium of credit transaction is because of its stable value. Both debtor and creditor, then, enjoy a reasonable protection." (Charles M. Thompson, *Elementary Economics*, New York, 1919; p. 204.)

"Since gold is the commodity whose value fluctuates from natural causes probably least of all, the importance of protecting creditors against loss from these slight fluctuations is less pressing than is often claimed." (Bilgram and Levy, *The Cause of Business Depressions*, Philadelphia, 1914; p. 36.)

It goes without saying that isolated sentences sometimes give an erroneous idea of an author's views. These quotations are offered merely to show that the general reader frequently comes across statements that give him a false sense of security in monetary "standards."

3. Alfred Marshall, *Principles of Economics* (seventh edition), London, 1916; p. 793.
4. William Warrand Carlile, *The Evolution of Modern Money*, New York, 1901; p. 315.
5. Figure 3 is taken from the first number of the *Stable Money Graphic*, issued by the Stable Money League (now the National Monetary Association), May, 1922. The dollar for 1865 in this chart was not a "gold dollar."

Figure 4 is based on statistics compiled, by the Federal Reserve Bank of New York, from the United States Bureau of Labor Index

of Wholesale Prices and the Circulation Statements of the Treasury Department.

Figure 7 (Chapter IX) is a map of Europe showing the different degrees of depreciation of "standards of value" in different countries at the same time.

6. Augustus Sauerbeck, *The Course of Average Prices of General Commodities in England*, London, 1908.
7. *The Commercial and Financial Chronicle*, November 26, 1921; p. 2234.
8. *Ibid.*, June 11, 1921; p. 2464.

Chapter V

1. Bertil Ohlin, *The Rise of Prices, Inflation and Foreign Exchange Policy*, Ekonomisk Tidskrift, Uppsola and Stockholm 1921, No. 3. The objections to Bertil Ohlin's definition are considered at greater length in Chapter X.
2. "Without attempting to harmonize the various conflicting views, nor to give a precise and formal definition of inflation, we may note that there is one idea common to most uses of the word, namely, the idea of a supply of circulating media in excess of trade needs. It is the idea of redundancy of money or circulating credit or both, a redundancy that results in rising prices. . . . More specifically, inflation occurs when, *at a given price-level*, a country's circulating media — cash and deposit currency — increase relatively to trade needs." (E. W. Kemmerer, "Inflation," *American Economic Review*, June, 1918; p. 247.) To us it seems unnecessarily confusing to introduce "trade needs" into the definition — business men have so many different conceptions of "trade needs." According to our definition, inflation occurs, no matter how we define "trade needs," when, at the same time, the volume of money increases and the price-level rises.

   The *Federal Reserve Bulletin* (July 1, 1919; p. 614) defines inflation as "the process of making addition to currencies not based on a commensurate increase in the production of goods." One trouble with this definition is that volume of trade is a better index of currency needs than volume of production. However, in any given decade, if there was inflation in our sense of the term, there would be inflation in the *Federal Reserve* sense. This is due to the fact that in a given business cycle, considered as a whole, variations in the volume of trade are likely to be about the same as variations in the volume of production. This would not hold true for very much shorter or for very much longer periods of time.

   It is true that, without more inclusive and more accurate index numbers of prices than are now available, we might have inflation

to a small extent without discovering it in the relation between volume of money and prices.

3. Inflation, says Professor Seligman, is "the existence of a currency in a quantity larger than is actually needed to carry on business transactions at a normal price-level." But he adds that, during the War, "to the extent that the increase of money and credit kept pace with the dislocation in the conditions of production and consumption, there was a rise in prices without there being any inflation." This statement appears to be inconsistent with his definition. It involves us, furthermore, in the current confusion concerning the causes of rising prices, which confusion is due in part to the prevailing false assumption that there is a balanced relation between new business and new bank credit created to finance it. That there is an exact correspondence between the volume of commercial transactions and the amount of money ordinarily placed in circulation in connection with these transactions, is frequently asserted and even more frequently assumed. It appears, however, from the evidence presented in the following chapters, that the assumption is unwarranted. (See Edwin R. A. Seligman, *Currency Inflation and Public Debts*, The Equitable Trust Company, New York, 1921; pp. 9–10.)
4. See W. T. Layton, *An Introduction to the Study of Prices*, Appendix C, on "The Vicious Circle of Prices," New York, 1912.
5. "The currencies of all belligerent, and of many other countries, though in greatly varying degrees, have since the beginning of the War been expanded artificially, regardless of the usual restraints upon such expansion (to which we refer later) and without any corresponding increase in the real wealth upon which their purchasing power was based; indeed, in most cases, in spite of a serious reduction in such wealth. . . . Where this additional currency was procured by further 'inflation' (i.e., by printing more paper money or creating fresh credit) there arose what has been called a 'vicious spiral' of constantly rising prices and wages and constantly increasing inflation, with the resulting disorganization of all business, dislocation of the exchanges, a progressive increase in the cost of living, and consequent labor unrest." (From the resolutions of the National Monetary Conference at Brussels. *Federal Reserve Bulletin*, December, 1920; p. 1284.)

   The *Bankers' Magazine*, London, said in January, 1921, p. 51: "It is instructive to trace how successive issues of currency notes have formed the cash basis of still further credit by the banks and thus increased the total level of bank deposits without the creation of any corresponding value to justify the increase. A similar effect resulted from the requests made to the banks to subscribe a portion

of the war loans. These subscriptions, instead of reducing deposits, had the effect of increasing them as soon as the Government disbursed the proceeds, thus aggravating the inflation and causing general prices to rise to a still higher level. The effect on national welfare is far-reaching."

Another clear analysis of the vicious spiral of inflation and deflation is found in Alfred Marshall, "Money, Credit and Commerce," London, 1923; pp. 18–20.

6. Pelatiah Webster, *Political Essays*, 1791; p. 175, note. See also, Francis W. Hirst, *The Paper Moneys of Europe*, Boston, 1922.
7. John Stuart Mill, *Political Economy*, New York, 1895; Book III, chap. VII.
8. Sir Lancelot Hare, *A Study of Exchange*, London, 1921; pp. 35–38.
9. Andrew D. White, *Paper Money Inflation in France; How it Came, What it Brought, and How it Ended*, New York, 1882; p. 44. See, also, J. S. Nicholson, *Inflation*, London; pp. 83–85; and H. H. Powers, "The Drug Habit in Finance," *Atlantic Monthly*, January, 1923.
10. United States Consular Reports, No. 68, September, 1885; p. 653.
11. Joseph Szebenyei, *Atlantic Monthly*, March, 1922.
12. Sir Henry Penson, *Is Germany Prosperous?* London, 1922. Concerning the results of inflation in Germany see, also, George W. Edwards, "Effects of the Price Revolution on Germany," *Annalist* (New York), November 27, 1922; p. 565.
13. Carl Snyder, "War Loans, Inflation and the High Cost of Living," *Annals of the American Academy*, vol. LXXV, No. 164, January, 1918; p. 143.
14. C. H. Northcott, "Unemployment Relief Measures in Great Britain," *Political Science Quarterly*, September, 1921; p. 432.
15. Joseph F. Johnson, in *The Economic World*, December 16, 1922; p. 869.
16. T. R. Jernigan, United States Consular Reports, No. 68, September, 1886; p. 653. The results of deflation are also described by Irving Fisher ("Business Depression and Instability of Money") in the *Bankers' Magazine*, January, 1922.
17. Gustav Cassel, *The World's Monetary Problems*, London, 1921; p. 66. See, also, John Foster Bass and Harold Glen Moulton, *America and the Balance Sheet of Europe*, New York, 1921; p. 90; and Fabian Franklin, *Annals of the American Academy*, May 7, 1920; p. 89.

Chapter VI

1. W. Stanley Jevons, *Money and the Mechanism of Exchange*, New York, 1892; p. 40.

2. *Dearborn Independent*, March 11, 1922.
3. *Ibid.*, March 25, 1922.
4. *Ibid.*, March 25, 1922.
5. *Ibid.*, March 18, 1922.
6. Thomas A. Edison, Questionnaire in the *New York World*, February 19, 1922. See, also, *The Nation's Business*, May, 1922; p. 16.
7. *Dearborn Independent*, March 18, 1922.
8. H. C. Cutting, *The Strangle Hold*, Chicago, 1921; p. 53. See, also, *The Palladium*, September, 1921; p. 1.
9. *Dearborn Independent*, March 18, 1922.
10. H. L. Loucks, *The Great Conspiracy*, Watertown, S.D., 1916; p. 27.
11. P. and A. Wallis, in *Prices and Wages*, because they err fundamentally in their conception of price-determination, overlook all the shortcomings of labor-hours as units of exchange. On page 221, they advance the usual fallacious reasoning on this subject: "So that their price might be quoted in hours of labor and all business exchanges made with hours as the basis of price, a paper currency could be made in notes of various time-values, and a 'one-day note' could be paid for a day's work and exchanged as a legal tender for any kind of goods that took an average day's work to produce; in fact, perform all the functions of money quite as well as, if not better than, our present currency. It would have the great advantage that the standard was really a fixed one and not subject to variations that could affect prices."

    W. E. Brokaw says, in the *Equitist:* "If we would adopt a work-unit money; that is, require that every dollar issued be issued solely for an hour's adult human work, and promise that it will be accepted in return for an hour's adult human work, no one could receive money for anything but human work, and no one would have to pay money for anything but human work. Which would stop ALL tribute now going to the people who own for their incomes. It would put an end to millionaire ownership and to pauperism."
12. H. L. Loucks, *The Great Conspiracy*, Watertown, S.D., 1916; p. 35.
13. Thomas A. Edison, Questionnaire in the *New York World*, February 19, 1922.
14. Senate Bill 2604, 67th Congress, 1st Session; Introduced by Senator Ladd, October 14, 1921.
15. Excellent discussions of the gold basis of money are found in the *Monthly Bulletin* of the National City Bank of New York, for March and April, 1922.

Chapter VII

1. *The New York Times*, July 16, 1922; section 7. See, also, "Edison's

Proposed Plan for Financing Agriculture," *Manufacturers' Record*, July 27, 1922; pp. 59–62. Mr. Edison has presented his plan in a pamphlet, under the title "A Proposed Amendment to the Federal Reserve Banking System," Orange, N.J., 1923.

2. During the period of inflation following the War, there were many cases of bank credit extended more than once on the same goods. See Paul Warburg, *Acceptances in Our Domestic and International Commerce*, published by the American Acceptance Council; p. 23.
3. H. C. Cutting, *The Strangle Hold*, Chicago, 1921; p. 79.
4. C. J. Melrose, *Money and Credit*, London, 1922.
5. *Dearborn Independent*, March 25, 1922.
6. Harrison H. Brace, *The Value of Organized Speculation*, Boston, 1913; Appendix.
7. Figure 5 was prepared by the Federal Reserve Bank of New York, from the Wholesale Price Index (aggregate of weighted prices) of the War Industries Board. The twenty basic commodities are: wheat, corn, hogs, steers, sugar, hides, wool, silk, cotton, rubber, pig-iron, copper, lead, coal, petroleum, southern yellow pine, cement, paper, sulphuric acid, tobacco.
8. Augustus Sauerbeck, *The Course of Average Prices of General Commodities in England*, London, 1908.
9. The Better Banking Bureau, of San Francisco, for example, errs in maintaining that the reason why bank credit does not fluctuate in volume with the volume of business is because of the gold standard. See H. C. Cutting, *The Strangle Hold*, Chicago, 1921; p. 98.
10. Wesley C. Mitchell, United States Bureau of Labor Statistics, Bulletin No. 284, October, 1921; p. 95.
11. Irving Fisher, *Stabilizing the Dollar*, New York, 1920. Professor Fisher's plan is discussed in Chapter XXI.
12. *The World*, New York, February 19, 1922.

Chapter VIII

1. *Dearborn Independent*, July 22, 1922.
2. *Dearborn Independent*, May 13, 1922.
3. Chapter II, above. To say that interest rates are determined by supply and demand is merely to begin the discussion of one of the most intricate of economic problems. The question remains, What are the factors that determine supply and demand? But this question has nothing to do with the justice of charging interest, which is the subject of our chapter.

   The Palladium, of which W. H. (Coin) Harvey is editor, says (January, 1923) that each State should establish a bank that will "pay no interest on money deposited with it," and on loans "will

not charge to exceed at the rate of four per cent per annum." The existence of such a bank, it is said, "calls attention to the Divine Law and moral precept that it is a sin to either pay or receive interest on money except by the sovereign power." *The Palladium* fails to explain, however, by what means the State is to obtain deposits if it pays no interest, when the Federal Government cannot obtain the use of money for less than three or four per cent. Nor does *The Palladium* explain how we are to fill political offices with men who are wise enough to allocate the loans justly, at an artificially low rate of interest, when at that rate there would not be enough money to go around. These are the fundamental difficulties that confront all those who are seeking to abolish interest or to fix interest rates by law.

4. See, also, *Monthly Bulletin* of the National City Bank of New York, July, 1922.
5. *Dearborn Independent*, August 19, 1922.
6. Chapter II, above; page 20.
7. In this connection see Gustav Cassel, *The World's Monetary Problems*, London, 1921; p. 52.
8. J. V. Nash, "The Golden Dam to the Stream of Prosperity," *Dearborn Independent*, August 19, 1922.
9. *New York Times*, July 16, 1922; section 7.
10. *Dearborn Independent*, March 11, 1922. Concerning the results of keeping interest rates down by a policy that pushes prices up, see E. W. Kemmerer, *High Prices and Deflation*, Princeton, 1920: chap. I.

Chapter IX

1. *Dearborn Independent*, March 25, 1922. There is a sound discussion of the problem of stabilizing foreign exchange by B. M. Anderson, Jr., in *The Chase Economic Bulletin*, New York, January 12, 1922; vol. II, No. 1.
2. Gustav Cassel, *Money and Foreign Exchange after 1914*, London, 1922; p. 107.
3. *Dearborn Independent*, March 25, 1922.
4. By "stabilization of purchasing power," we mean here, as throughout this volume, approximate stabilization. Absolute stability, as we have pointed out in earlier chapters, is not attainable in a world in which nothing is absolutely stable upon which a unit of value might be based. (See page 122, above.)
5. Figure 7 is a map of Europe, prepared by the National Industrial Conference Board, to show the values of European currencies, based on New York exchange, September 1–15, 1922. The figures are from the Federal Reserve Board.

6. In spite of all that we have said about the injurious effects of inflation, we must admit the necessity of a qualification to Professor Alfred Marshall's statement that "an increase in the amount of money in a country does not increase the total services which it performs." (*Money, Credit and Currency*, London, 1923; p. 49.) When, for any reason, there is a downward movement of general prices and a consequent tendency to business depression and increased unemployment, any increase in the total volume of money in circulation is likely to increase the total services which it performs. In subsequent chapters, we shall pursue this subject further and reach the conclusion that when such conditions prevail in any country, an increase in the amount of money in circulation which goes directly into the hands of consumers is sure to move an increased volume of goods into consumption, stimulate production, increase employment and, therefore, for the time being increase the total services which money performs.

Chapter X

1. Irving Fisher, *The Making of Index Numbers*, Pollak Publication, Number 1, Newton, Massachusetts, 1922.
2. This is the equation of exchange upon which Professor Fisher bases his book, *The Purchasing Power of Money*. That book contains a more extensive exposition of the equation of exchange than we have presented.
3. Professor Fisher expresses the goods side of the equation of exchange as PT, allowing P to stand for the level of prices and T for the volume of goods sold. The equation then reads: $MV = PT$.

   Many have raised the objection that the expression of Σpq as PQ is inexact and fanciful. It would be grossly so if P were taken as an average of prices and Q as a sum of quantities; but the "units" of Q are not tons, yards, bushels, and so forth, but "dollars' worth as of a base year." With the new refinement of index number methods, in Dr. Fisher's *The Making of Index Numbers*, PT becomes charged with an amazingly precise meaning, the fringe of possible doubt being less than a tenth of one per cent.

$$MV = \Sigma pq = P\ (Q\Sigma\ p_o q_o) = PT$$

   That is to say, P is the index number of prices while T is the product of the index number of quantities (Q) times the value sum ($\Sigma p_o q_o$) in the base year used for reference. P and Q have no meaning for one year alone. They imply more than one year, since they are index numbers. Thus, the equation of exchange for 1922 tells us that the money in 1922 (M) times its velocity (V) equals the index number of prices of 1922 *relatively to some other year*, say

1913, times the index number of quantities exchanged (Q) relatively to the same base, 1913, times the total value exchanged in the base year ($\Sigma p_0 q_0$). Since we are usually more interested in the price-level (P) than the trade level (Q), we lump the last two of the three factors together and call it T.

4. Simon Newcomb, *Principles of Political Economy*, New York, 1885; p. 346.
5. This point is well considered in Frank H. Knight's *Risk, Uncertainty and Profit*, Boston, 1921; chap. I.
6. Oswald St. Clair, *The Physiology of Credit and of Money*, London, 1921; p. 45.
7. *Ibid.*, p. 55.
8. Simon Newcomb, *Principles of Political Economy*, New York, 1885; p. 332.

   "The total value of an inconvertible paper currency, therefore, cannot be increased by increasing its quantity: *an increase in its quantity, which seems likely to be repeated, will lower the value of each unit more than in proportion to the increase.*" (Alfred Marshall, *Money, Credit and Commerce*, London, 1923; p. 48.)
9. Figure 12 is on page 243.
10. This matter is discussed in Chapter XVIII.
11. "It is not uncommon in Austria and other countries of central and eastern Europe for a commodity to pass through the hands of fifteen or twenty speculative middlemen — each taking toll through price advances — before it reaches the final consumer. Such business activity yields monetary profits, but it does not increase production. On the contrary, it demoralizes industry." (Bass and Moulton, *America and the Balance Sheet of Europe*, New York, 1921; p. 125.)
12. These questions are discussed in "The Circuit Flow of Money," *American Economic Review*, September, 1922, by William Trufant Foster. The substance of this paper is included in Chapter XVIII, below.

    Professor Alfred Marshall, in *Money, Credit and Commerce* (London, 1923; p. 48), says: "The other things, that must remain equal for the purposes of this statement, include (a) the population; (b) the amount of business transacted per head of the population; (c) the percentage of that business which is effected directly by money: and (d) the efficiency (or average rapidity of circulation) of money. Only if these conditions are reckoned in, can the doctrine come under investigation: and if they are reckoned in the doctrine is almost a truism." (In this quotation the term "money" appears to be synonymous with our term "currency," and that is the sense in which the term "money" is employed throughout this

note.) This enumeration of the other things that must remain equal is not entirely satisfactory. In terms of the equation of exchange ($MV = PT$) we may note that if (a), (b) and (c) are all constant, T is constant; but T may remain constant and P may remain constant, under numerous conditions other than those enumerated above. In the first place, it is not necessary that the population should remain equal. A given amount of money spent for a given purpose, within a given period of time, by a given number of people, has the same effect upon the price-level as when spent by a smaller or larger number of people. In the second place, "the amount of business transacted per head of population" need not remain the same. Changes in other factors may offset the influence on prices of changes in the amount of business transacted per head of population. We must, however, make various inquiries concerning the *nature* of the business transacted, including the crucial question whether there are changes in the proportions of the total transactions which have to do with production, consumption, and speculation. In the third place, it is not necessary that "the percentage of that business which is effected directly by money" should remain equal: a change in that factor may be offset by a change in other factors. On the other hand, that factor might remain the same, yet there might be a change in prices due to a change in the proportions of the various kinds of business that are transacted without the use of money. (See pages 163–167.) In the fourth place, the efficiency of money as a whole need not remain the same. And even if it did remain the same, we should still have to ask whether there were changes in the relative rapidity of circulation of money used to produce goods and money used to buy consumers' goods (see Chap. XVIII); and whether there were changes in the relation of each of these items to the rapidity of circulation of money used in speculation. (See Chap. XIV.) Finally, we must consider changes in the volume and velocity of bank credit and in the nature of the transactions effected by means of bank credit. Evidently, then, before we can look upon the "quantity doctrine" as almost a truism, we must take into account various "other factors" not enumerated by Professor Marshall. It appears that much of the current, confusing controversy over the "quantity doctrine" is due to the fact that most writers have based their discussions upon an inadequate analysis of those other factors that must remain equal.

13. Statistics for Figure 8 were provided by the Federal Reserve Bank, New York City. Other countries furnish many other illustrations of the close correlation between changes in prices and in volume of money. See, for example, Figure 1, page 59, in Gustav Cassel's

Money and Foreign Exchange after 1914, London, 1922. This figure shows the marked correspondence between note circulation in Sweden, 1914 to 1920, and prices. See, *Report on Business Conditions*, Second Federal Reserve District, New York, March 20, 1920; May 31, 1920.

14. The *New York Times* says, editorially, that "the position of those theorists who ascribe the whole of every rise or fall in prices to expansion or contraction of the currency has been made untenable by the facts." If there are any such theorists, they were discredited long before the War. But the editorial proceeds into debatable ground, for it implies the argument, now frequently heard, that price changes are *always the cause* of changes in the volume of money.

One reason why official statistics for the past decade do not show an exact correlation between changes in the volume of money in circulation and changes in the price-level is because changes in the volume of money in circulation in each country have not been measured with accuracy. We know in a general way that during the War currency was exported in large quantities, but we have little statistical data. How much of the currency of the United States went to Europe? How much to South America and to Central America? How much of the currency of Germany came to the United States? Due recognition of the importance of these questions might lead the governments of the world to coöperate officially in obtaining more dependable estimates than we now have of the international movements of currencies.

Chapter XI

1. George W. Gough, *Wealth and Work*, London, 1920; p. 248.

The investigations of the building industry by the Lockwood Committee of New York and the Daly Committee of Chicago show to what extent the consumers' desires concerning volume, quality, and price are sometimes frustrated when groups of producers get together to eliminate competition.

2. C. H. Douglas, *The Control and Distribution of Production*, London, 1922; p. 19.
3. There is an effective use of the dollar-vote analogy in Thomas N. Carver's *Essays in Social Justice*, Cambridge, 1915; chap. v.
4. See publications of the Proportional Representation League, 1417 Locust Street, Philadelphia.
5. C. H. Douglas, *Credit Power and Democracy*, London, 1921; p. 16.

Except in the case of monopoly, it is not in the interests of the individual producer to attempt to keep up prices by restricting *his* output. For that reason, we cannot agree with Frederick L. Acker-

man that "the central interest of all who engage in the production of goods and services is unavoidably in the maintenance of supply at a point appreciably short of the communities' needs, or more precisely, short of the communities' effective demand." (*The Journal of the American Institute of Architects*, January, 1923; p. 27.) "So productive is the machine process," he declares, "that it cannot possibly be allowed to run at anything like its capacity. For to allow it so to run under distribution regulated by the price system would be to bring privation and hardship not only to the producers, but to the community as a whole." This is the central theme of a large modern school of economics. Their writings should stimulate thought in the right direction; but they err in concluding that the conditions they rightly condemn are due to the fact that goods are produced for profit and distributed by the price system.

6. See pages 219–227.
7. Many critics of the existing economic order insist that production schedules should be controlled by consumers. Says Major Douglas (*Living Age*, January 19, 1919): "So far from the necessity of this country and the world being an orgy of unlimited production, the first need is for a revision of material necessities combined with sound scientific efforts to produce to a program framed to meet the extended demands not artificially stimulated but individualistic in origin wherever possible." The author appears to miss the point. No other enterprise of human society is now, in fact, so largely individualistic in origin as commercial production.

Sidney A. Reeve, on the other hand, has written a book of eight hundred pages (*Modern Economic Tendencies*, New York, 1921) to prove that there is no way whereby the people can direct production to the satisfaction of their desires except through an organization of consumers. He ignores the fact that production is to-day almost exclusively directed by the joint action of all consumers individually expressing their desires. Nor does it seem to occur to him that the only organization of all the consumers in this country is the Federal Government, and that he is in fact arguing for the control of all production by politicians, a method that must inevitably fail to satisfy the wishes of the people. "Under a national factory system," he says, "each citizen will be paid what the consumer thinks he is worth, as his efforts are appraised automatically by the consumer's selection at the shop-counter. The great majority will then earn far more than now, in purchasing power, because they produce what the people really want" (p. 767). Since the author overlooks the fact that his "Ultimate Consumers," who are to control production in his ideal society,

are really "the State," he also overlooks the fact that the problem of organizing consumers for the direction of industry — the details of which he avoids throughout the volume — is nothing but the old problem of maintaining the efficiency of politically controlled enterprises.

Bank credit, also, according to Major Douglas (*Credit Power and Democracy*) should be controlled by the people; but that means, necessarily, political control. Under the present system, the distributors of bank credit go out of business unless they succeed, for the most part, in giving the people what they want. Politicians could produce goods and services, regardless of the wishes of the people, and continue producing until their terms of office expired, and even then often escape responsibility for their acts. In any event, it would be other people's money that they had wasted.

In *Economic Democracy*, New York, 1920; p. 140, Major Douglas denounces "the capitalistic system of price-fixing" and urges "the fixing of prices on the broad principles of use-value, by the community as a whole, operating by the most flexible representation possible." But the author fails to offer any system of price-fixing that would be as flexible a representation of the wishes of the whole community as the system that now prevails.

The *New Republic* (editorial: June 2, 1920; p. 4) also misdirects its attacks upon the economic order when it says: "The opportunities for making profits were prodigious, but the profits were to be made not so much by increasing production as by manipulating prices. . . . Under such circumstances, the condemnation of profiteering is equivalent to a condemnation of the mechanism of production, which derives its motive power from profits. The only way to render that denunciation effective is to seek reorganization of industry which shall abandon profits as its source of energy." The root of the trouble is not in the fact that goods are produced for sale at a profit, nor in the control of prices by the individual producer, but in fluctuating price-levels mainly due to monetary causes.

Major Douglas has rendered a timely service by urging the study of the causes that prevent consumers from obtaining enough money to buy, at current prices, the commodities that are produced. As will appear in later chapters, Major Douglas seems to us to be one of the few writers who have looked in the right direction for the major cause of economic troubles. But his analysis of the causes of deficiency in consumers' purchasing power seems to us faulty; and his proposed remedies, as we understand them, seem impractical, and even if practical, inadequate. See note 4 to Chapter XVI, and note 15 to Chapter XVII. See, also, Chapter XX, below.

8. Senate Bill 2604, 67th Congress, 1st Session; introduced by Mr. Ladd, October 14, 1921. See, also, Gustav Cassel, *Money and Foreign Exchange after 1914*, London, 1922; pp. 19–25.
9. Gustav Cassel, *The World's Monetary Problems*, London, 1921.

Dr. H. Potthoff, of Munich, in his *Arbeitsrecht* (October 30, 1920), advocates collective agreements between employers and employees which shall not only fix wages for a long period, but at the same time fix the prices of the chief necessities of life. Under this plan employers not only guarantee the workers a fixed nominal wage, but a fixed real wage, by assuming the risk of future changes in prices. The *Korrespondenzblatt*, the journal of the German Federation of Labor, opposes the plan on the ground that it would be unsatisfactory to the workers for the same reason that the war-time price-fixing and rationing schemes were unsatisfactory. As a matter of fact, the plan would not trouble the workers for more than a few months. Regardless of collective agreements, it would break down just as soon as there were not enough goods produced to go around at the stabilized prices. (See *Monthly Labor Review*, May, 1921; p. 92.)

Chapter XII

1. See Chapter III.
2. F. O. Watts, President of the First National Bank in St. Louis, and Chairman of the American Financial Delegation to the International Chamber of Commerce Meeting at London, June, 1921. *Commercial and Financial Chronicle*, October 29, 1921; p. 93.
3. Bilgram and Levy, *The Cause of Business Depressions*, Philadelphia, 1914; p. 53.
4. Lettice Fisher, *Getting and Spending*, London, 1922; p. 162.
5. Sir Lancelot Hare, *A Study of Exchange*, London, 1921; p. 15.
6. George W. Gough, *Wealth and Work*, London, 1921; p. 126.

7 and 8. Further references are needless. The idea pervades economic writings that supply and demand are the same thing looked at from different standpoints and must be equal. The error is due directly to the insistence that modern trade is merely refined barter and to the consequent overlooking of the changes introduced when demand is expressed, not in goods, but in money.

9. See, also, George E. Roberts, in *Review of Reviews*, November, 1921; p. 509.
10. Oswald St. Clair, *Physiology of Credit and of Money*, London, 1921; p. 106.
11. Percy and Albert Wallis, *Prices and Wages*, London, 1921; pp. 393; 396.
12. J. Laurence Laughlin, *Principles of Money*, New York, 1903; p. 74.

13. W. P. G. Harding, Address at Charlotte, North Carolina, September 22, 1921.

In the *Annalist* (New York) December 18, 1922; p. 660, Dr. R. Escourt says: "Federal Reserve notes are not accommodation bills but first class bills of exchange, fully represented by wealth produced and ready for distribution and consumption." Here, in the words "fully represented," we seem to have the same misleading assumption that we have observed in the other quotations.

Francis H. Sisson, vice-president of the Guaranty Trust Company of New York, in an address before the Pittsburgh Chapter of the American Institute of Banking, December 7, 1920, said: "Neither the banks nor the Government can create credit. Credit is the product of enterprise and operations in commerce, and is limited and defined by the nature of such operations. That Mr. Sisson does not mean that the expansion and contraction of bank credit is strictly limited by the nature of the commercial operations seems evident from remarks in the same address. He says, for example, "the banks must necessarily exercise restraint upon the expanding volume of credit"; and he speaks of "conditions which have made necessary a bank policy intended to check the expansion of bank credits." If, as is usually assumed, inflation cannot result from loans made against commodities, in the ordinary course of business, banks would not need to exercise restraint upon the expanding volume of bank credit.

Concerning bank loans and the values behind them, see H. Parker Willis and George W. Edwards, *Banking and Business*, New York, 1922; pp. 493–495.

H. C. Cutting, in *The Strangle Hold*, Chicago, 1921; p. 285, proposes control of bank credit by the public, so that "credit could be extended to any length as far as both time and amount are concerned. . . . There would be no control except the demands of business."

14. W. Stanley Jevons, *Money and the Mechanism of Exchange*, New York, 1895; p. 1.

Chapter XIII

1. Walter W. Stewart, "An Index Number of Production," *American Economic Review*, March, 1921.

Monthly Review of Credit and Business Conditions, by the Federal Reserve Agent, New York, October 30, 1920; p. 11.

Edmund E. Day, "The Volume of Production of Basic Materials in the United States, 1909–1921," *Harvard University Review of Economic Statistics*, July, 1922.

Walter R. Ingalls, *Wealth and Income of the American People*, York, Pennsylvania, 1922; p. 281.

See, also, *Income in the United States, Its Amount and Distribution, 1909–1919*. Publication Number 2 of the National Bureau of Economic Research, Incorporated, New York, 1922.

2. O. M. W. Sprague, "Discount Policy of the Federal Reserve Banks," *American Economic Review*, March, 1921; p. 16.

   Warren M. Persons, in *The Basis of Credit Expansion under the Federal Reserve System* (*The Review of Economic Statistics*, Preliminary Volume II, Cambridge, 1920; p. 21), estimates the theoretical range of credit as ten to twenty-five times the amount of gold in the reserves.

3. Figure 11 is from the *Report on Business Conditions* of the Federal Reserve Agent at New York, March 20, 1920.

   Professor Kemmerer says: "We find that for those six years [1913 to 1919] the physical volume of business increased approximately 9.6 per cent, the monetary circulation 71 per cent, and bank deposits 120 per cent." (E. W. Kemmerer, *High Prices and Deflation*, Princeton, 1920; p. 29.)

4. Charles Gide, *Principles of Political Economy*, Boston, 1904; p. 212.
5. W. F. Spalding, *Functions of Money*, London, 1921; p. 19.

Chapter XIV

1. The usual discussion of the good and evil effects of speculation is found in various textbooks. See, for example, F. W. Taussig, *Principles of Economics*, New York, 1916; vol. I, chap. XI.
2. See the *Report on Business Conditions*, from the Federal Reserve Agent at New York, to the Federal Reserve Board, January 20, 1920.
3. These characteristics of money are analyzed in Chapter XII.
4. In *Bank Credit and Business Cycles* (Number 5 of the Pollak Publications), O. M. W. Sprague discusses methods of curbing the expansion of bank credit, as prices advance.
5. We cannot agree with Major Douglas that "the banks, through their control of credit facilities, hold the volume of production at all times in the hollow of their hands." (C. H. Douglas, *The Control and Distribution of Production*, London, 1922; p. 21.)

   This error underlies much of the current literature of reform. In *The New Economics*, for example, we read: "The quantity and class of goods to be produced, and their distribution when completed, the community as a whole has no power of deciding: in this, as in all other matters, it is completely in the hands of the banking interests." (Marten Cumberland and Raymond Harrison, *The New Economics*, London, 1922; pp. 51–52.)

6. Concerning the merits of the Federal Reserve System, see: Harold L. Reed, *The Development of Federal Reserve Policy*, Boston, 1922. Robert L. Owen, *The Federal Reserve Act*, New York, 1919. H. Parker Willis, "The Federal Reserve System," *Political Science Quarterly*, December, 1922.

Chapter XV

1. It is exceedingly difficult to draw a hard-and-fast line between producers' goods and consumers' goods. What are railroad ties, for example, and street pavements? What is wheat bread that a farmer consumes for his own pleasure, but also in order that he may have strength to plant more wheat? Fortunately, the rough distinction that we have made is sufficient for all the purposes of this volume.
2. J. A. Hobson, *Work and Wealth*, New York, 1919; p. 190.
3. George W. Gough, *Wealth and Work*, London, 1921; p. 161.
4. Walter R. Ingalls, *Wealth and Income of the American People*, York, Pennsylvania, 1922.
5. Those who admit all that we have said about the necessity of continued accumulations of capital facilities, may still ask whether there is not danger of excessive accumulations. J. A. Hobson goes so far as to ascribe periodic business depressions wholly to "a normal tendency to apply to the production of capital-goods a proportion of the aggregate productive power that exceeds the proportion needed, in accordance with existing arts of industry, to supply the consumptive-goods which are purchased and consumed." (*Economics of Unemployment*, London, 1922; p. 147.) This question is considered in Chapter XX, below.

Chapter XVI

1. As this is the usual statement, it is familiar to all readers of current economic literature.
2. Pages 220–221.
3. *Current Affairs*, Boston, March, 1921; p. 4.
4. Concerning the time-factor in production and the deficiency of purchasing power that develops as business expands, Hudson B. Hastings, of the Pollak Foundation, has made studies that have confirmed the authors of this volume in their impression of the importance of these factors. While he must not be held responsible for the views here expressed by the authors, his help has been invaluable. The rigorous analyses which he has just completed (March, 1923) answer with precision some of the questions we have raised. His study on *Costs and Profits* (Number 3 of the Pollak Publications) enables us to supplant surmises concerning certain

major factors of business fluctuations with conclusions from which there is no escape.

Chapter XVII

1. Thomas W. Lamont, "The American Banker's Responsibility," *Journal of the American Bankers Association*, November, 1922; p. 261.
2. See pages 35–40.
3. See pages 163–167.
4. F. Lavington, *The Trade Cycle*, London, 1922; p. 30.
5. M. C. Rorty, *Notes on Current Economic Problems*, No. III. Publication of American Telephone and Telegraph Company; 1921; p. 5.
6. John H. Van Deventer, "Unemployment a Cause, Not an Effect of Industrial Depression," *Industrial Management*, October, 1921.
7. C. H. Northcott, "Unemployment Relief Measures in Great Britain," *Political Science Quarterly*, September, 1921; p. 420.
8. Figure 13, based on statistics furnished by the Federal Reserve Bank of New York, compares retail sales with wholesale sales, 1919–1921. The statistics are for sales of representative department stores in the New York district, compared with a weighted index of sales of wholesale houses in the district; also for sales of chain grocery and drug stores having headquarters in this district compared with the sales of wholesale grocery and drug concerns in the same district. (See, also, *Monthly Review of Credit and Business Conditions*, by the Federal Reserve Agent, New York, August 1, 1921; pp. 9–10.)

   Studies by the Department of Industrial Statistics of the Federal Reserve Bank of Boston, not yet published, show an actual falling-off in the physical volume of trade of five leading department stores of Boston; but the figures give us no indication whether the slump was due to lack of purchasing power or a "Buyers' Strike."
9. *Monthly Review of Credit and Business Conditions*, by the Federal Reserve Agent at the Federal Reserve Bank, New York, June 1, 1921.
10. E. M. Herr, *New York Evening Post*, November 3, 1921.

    "Building was reduced to a minimum, road construction was stopped, furnaces from one end of the country to the other were banked, unemployment to a frightful extent ensued; and all this for no lack of credit facilities, but for lack of markets in which to sell the products of farm and mill and factory." (Senator Glass, before the United States Senate, January 16–17, 1922.)

Chapter XVIII

1. George W. Gough, *Wealth and Work*, London, 1920; p. 138.
2. See Chapter X, above; pp. 171–175.
3. Figure 14 is from the Federal Reserve Bank of New York.
   The annual rate of turnover is obtained by subtracting Time Deposits and Government Withdrawals from the gross Debits to Individual Accounts, thereby securing revised figures for the debits. These revised debits are shown weekly, but are later grouped into a monthly total. This total is divided by the number of working days in a given month and the resulting figures give average daily individual debits. This latter figure is then multiplied by the number of working days in the year, and that result, divided by the average daily net demand deposits, yields the annual rate of turnover.
4. Money in circulation, as we use the term, is defined on page 19, above.
5. M. C. Rorty, *Notes on Production*, Publication of the American Telephone and Telegraph Company. See, also, M. C. Rorty, *Some Problems in Current Economics*, New York, 1922; p. 63.
6. Irving Fisher, *Purchasing Power of Money*, New York, 1920. See, also, *Income in the United States*, National Bureau of Economic Research, 1921.
7. Simon Newcomb, in his *Principles of Political Economy*, Book IV, chap. II, deals with an equation of exchange, under the name of "the equation of societary circulation." In Book IV, chap. IV, sec. 15, on "Changes in Rapidity of Circulation," he mentions two of the factors that we have enumerated, namely, the prospect of changes in price, and changes in the amount of money paid as wages. He says: "If in a manufacturing establishment an unexpected disagreement occurs between the employer and the operatives, the money which the former received in the course of business no longer goes to the payment of the latter, and remains for a longer period on their hands than it would otherwise have done. Thus every strike on the part of laborers tends to diminish the rapidity of circulation." This quotation illustrates the importance of distinguishing between rapidity of circulation and rapidity of the circuit flow. It is the circuit flow, and not necessarily the circulation of money in general, that is retarded when a smaller proportion of the money in circulation is paid as wages. When a manufacturer curtails production, and therefore needs less money for the payment of wages, he may immediately pay off bank loans, thus reducing the volume of money in circulation. He thereby retards the circuit flow of money, but not the velocity of money.
8. A more detailed study of some of the phases of this subject will be

found in a paper by Hudson B. Hastings, of the Pollak Foundation (*American Economic Review*, June, 1923), on "The Circuit Velocity of Money." This paper is an extension of Chapter XVIII of this volume.

Professor Hastings comes to the following conclusions:

There are and always have been numerous changes going on in the business world whose influence is either to increase or decrease the circuit velocity of money.

These changes are brought about by those who neither know, nor see any reason why they should care to know, what will be the influence of these changes on *C*.

No intelligent attempt is made by individuals, business concerns or government agencies to control or modify the influence of the various factors that affect *C*.

By the laws of chance alone, *C* will not remain constant.

Relatively few of the factors that effect a change in *C* are offset by a change in the volume of money which is produced at the same time and from the same cause.

The major net changes which these factors bring about in *C* tend to produce corresponding changes in the average daily amount of money spent for goods in consumption; and if there are no changes in the number of units of goods consumed, these changes in the general price-level of goods are disclosed by the index equation of exchange ($M_1C_1 = P_1T_1$).

The retail price-level of tangible consumers' goods, which is of primary importance to the business world and to the consuming public, is a function of *C* and not of *V;* and there are many factors, particularly those of a secular nature, which do not have the same effect on *C* as on *V*.

Therefore, changes in the general price-level of new consumers' goods can be much more readily explained by the use of the index equation of exchange than by the use of the general equation of exchange ($MV + M'V' = PT$).

9. The J. Walter Thompson Company, of New York City, is to be commended for its efforts to stimulate interest in the measurement of the flow of money into consumers' hands. The Company offered a prize for studies, submitted before September 30, 1923, of "A Statistical Index of the Purchasing Power of Consumers in the United States." We quote from the announcement:

"It is the belief of the donors that an accurate knowledge of markets for products is fundamental in the formulation of business policies, and that the clarifying of methods and the development of a trustworthy technique in measuring the buying capacity of consumers living in different parts of the country, in different and

varying types of communities, and under divergent conditions of prosperity or depression, has become an important part of the process of making intelligent market plans.

"Studies have been made in the past in the distribution of population, as well as in incomes. Thus recent studies published by the National Bureau of Economic Research on 'Income in the United States' offer a summary of incomes in this country. Very little attempt has been made, however, to translate incomes into terms of purchasing power, which are, of course, the terms in which they gain their practical significance. Moreover, even in the studies of incomes which have been made, there has been only partial subdivision of the results by sections of the country, sizes of towns, or types of communities, or to indicate variations due to changes in general economic conditions.

"Work has also been done in the matter of individual or household budgets. Various organizations have compiled statistical information concerning the expenditures of individual families of different types and classes. Yet here also the work has been neither comprehensive nor coördinated.

"In order that contestants may realize how unrestricted the competition is, we mention the following as topics which would be included in the general subject: margins of savings in typical family budgets; classification of expenditures in typical budgets by necessities, semi-luxuries, and luxuries; incomes classified by occupations, sections of the country, sizes of towns, types of communities, conditions of prosperity or depression; methods of determining potential demand for commodities of various types. The contestant may discuss either the material of a particular problem or a method of securing such material or both.

"The subject, however, is to be treated with special relation to the buying capacity of the ultimate consumer. In order to limit the scope of the work to be done, therefore, the demand for consumers' goods alone should be covered, eliminating any discussion of the demand for raw materials or other types of producers' goods which go into the making of finished products."

This announcement emphasizes the necessity of measurements of the buying capacity of consumers as a basis for intelligent market plans. Such measurements, in our view of the subject, have a much wider significance: they are essential to an understanding of all the major problems of economics. Yet, as we have said in Chapter XVIII, most of this region is virgin ground.

Chapter XIX

1. Oswald St. Clair, *The Physiology of Credit and of Money*, London, 1921; p. 72.

2. Typical of the demands for more money are the following:

"Money is scarce and dear, because limited in quantity and monopolized by one private business." (H. L. Loucks, *The Great Conspiracy*, Watertown, S.D., 1916; p. 35.)

"Wealth must slow down to pass through the narrower gates of money, because there is more wealth than there is money to move it." (*Dearborn Independent*, January 28, 1922.)

"The business body is sluggish on account of contracted credit and currency." (Official publication of the Farmers' Union of Kansas, March 16, 1922.)

"The whole circle of labor, production and use is stopped because of the insufficiency of money." (*Dearborn Independent*, January 21, 1922.)

"Money has been banned as currency by fiat of the workers' soviet, while here at home it has been banned by the bankers' soviet." (*Labor*, January 29, 1921.)

In *Money Problems* (London, 1920) Arthur Kitson says: "The average business man is beginning to realize that what the banker calls 'accommodation,' and grants to him with the air of an autocrat bestowing favours upon a subject, is something which already belongs to him, and to other members of his class collectively, and to the use of which he has a moral right. He fails to see why this should not be made a legal right." Obviously, if the average business man has a legal right to all the credit he wants, there is no limit whatever to inflation.

Chapter XX

1. The best summary of theories of business cycles is in Wesley Clair Mitchell's *Business Cycles*, Berkeley, California, 1913. Another is in J. Lescure's, *Des crises générales et périodiques de surproduction*, Paris, 1907. A recent summary is in Volume IV of *The Review of Economic Statistics*, Cambridge, Mass., October, 1922: "Secular Trend and Business Cycles: a Classification of Theories," by J. R. Commons, H. L. McCracken, and W. E. Zeuch.
2. R. E. May, *Das Grundgesetz der Wirtschaftskrisen*, Berlin, 1902.
3. A. Aftalion, *Essai d'une theorie des crises générales et périodiques*, Paris, 1909.
4. M. Bouniatian, *Studien zur Theorie und Geschichte der Wirtschaftskrisen*, Munich, 1908.
5. See articles in Schmoller's *Jahrbuch für Gesetzgebung*, 1902.
6. Jean Lescure, *Des crises générales et périodiques de surproduction*, Paris, 1907.
7. J. A. Hobson, *The Economics of Unemployment*, London, 1922; p. 50.

8. C. H. Douglas, "The Delusion of Super-production," *Living Age*, January 18, 1919; p. 180.
9. That real wages of labor increased for many decades, under a system of production for sale at a profit, is true whatever the facts may be for the last quarter of a century. (See Paul H. Douglas and Frances Lamberson, "The Movement of Real Wages, 1890–1918," *American Economic Review*, September, 1921; p. 409.)

   It is important to keep in mind the distinction between total wages and wage rates. Concerning the extent to which wage rates lag behind the cost of living, see W. T. Layton, *An Introduction to the Study of Prices*, London, 1920; pp. 136–140.

   For a chart by G. H. Wood showing the course of money wages, real wages, retail prices, and unemployment, 1850 to 1910, see W. T. Layton, *An Introduction to the Study of Prices*, London, 1920; p. 185.

   The following table, prepared by Mr. Bowley, shows the course of money wages, prices, and real wages during the nineteenth century. (From the article on "Wages" in Palgrave's *Dictionary of Political Economy*.)

Periods	Nominal Wages	Prices	Real Wages
1790–1810	Rising fast	Rising very fast	Falling slowly
1810–1830	Falling	Falling fast	Rising slowly
1830–1852	Nearly stationary	Falling slowly	Rising slowly
1852–1870	Rising fast	Rising	Rising considerably
1870–1873	Rising very fast	Rising fast	Rising fast
1873–1879	Falling fast	Falling fast	Nearly stationary
1879–1887	Nearly stationary	Falling	Rising
1887–1892	Rising	Rising and falling	Rising
1892–1897	Nearly stationary	Falling	Rising
1897–1900	Rising fast	Rising	Rising
1900–1904	Falling a little	Falling and rising	Stationary

The prices are based on the price index numbers of Jevons and of the *Economist*.

10. C. H. Douglas, "The Delusion of Super-production," *Living Age*, January 18, 1919; p. 180.
11. C. H. Douglas, *The Control and Distribution of Production.*
    Economic Democracy.
    Credit Power and Democracy.
    The Douglas Theory: A Reply to Mr. J. A. Hobson.

    W. Allen Young, *Dividends for All: Being an Explanation of the Douglas Scheme.*

    Hilderic Cousens, *A New Policy for Labour.*

These books are all published by Cecil Palmer, Bloomsbury Street, London, W. C. 1.

12. C. H. Douglas, *Economic Democracy*, New York, 1920; pp. 66, 67.
13. J. A. Hobson, *The Economics of Unemployment*, London, 1922; p. 147.
14. *Ibid.*, pp. 42, 67, 80, 119.
15. *Ibid.*, p. 81.
16. See page 316, above.
17. J. A. Hobson, *The Economics of Unemployment*, Chapter V.
18. See C. H. Douglas, *The Douglas Theory: A Reply to Mr. J. A. Hobson*, and Mr. Hobson's criticism of the Douglas Theory, in Chapter VIII of *The Economics of Unemployment*.
19. Hudson B. Hastings, in *Costs and Profits*, Number 3 of the Pollak Publications, presents an extensive analysis of the effects of costs and profits on the state of business activity. What we have said toward the close of Chapter XVII embodies some of the main conclusions of that study and, indeed, is not altogether clear, except in the light of that study. His book offers a new analysis of the causes of business depressions. The analysis is based on an attempt to measure the total value of tangible and intangible goods produced for sale in relation to the total purchasing power available for the purchase of such goods. By an accounting method, the conclusion is reached that, because of the ways in which some items of cost, intercorporate income, and particularly profits are handled by typical business concerns during a period of business activity, the value, at the current retail price-level, of goods produced far exceeds the flow of purchasing power from permanent sources. In other words, recurring periods of business depression are the certain result of present financial and business policies. The analysis shows that a further cause of business crises and depressions is the overdevelopment of concerns producing tangible goods as compared with concerns producing intangible goods. Thus, *Costs and Profits* opens up a new method of approach to the problem of varying states of business activity, and one which promises to yield additional conclusions of significance.
20. See Chapter XVI, above.
21. See Chapter XIV, above.

Chapter XXI

1. See page 8, above.
2. See pages 245–246, above.
3. Irving Fisher, *Stabilizing the Dollar*, New York, 1920.
4. Figure 4; page 45.
5. Pages 162–175.

6. Page 249.
7. Chapters XII and XIII.
8. Pages 137–139.
9. See Charles J. Bullock, O. M. W. Sprague, W. B. Donham, "Federal Reserve Bank Policy," in the *Harvard Business Review*, January, 1923.
10. Note 4, Chapter II.
11. Irving Fisher, *The Purchasing Power of Money*, New York, 1920; pages 49–53.
12. According to a plan proposed by Carl Snyder. Suggested also, in connection with an ill-advised proposal for the immediate abolition of the gold basis of money, by Carl Strover, in *Monetary Reconstruction*. (Published by the Author, 133 West Washington Street, Chicago, 1922.)

    Professor Alfred Marshall says: "It has often been suggested that the supply of a nation's currency itself might ultimately be so adjusted as to fix the purchasing power of each unit of the currency closely to an absolute standard. In spite of the severe criticism to which this suggestion has been subjected, there seems no good ground for regarding it as wholly impracticable: but many long and tedious studies, stretching perhaps over several generations; and many tentative experiments moving cautiously toward the ideal goal, would need to be taken before any large venture in this direction could properly be made." Alfred Marshall, *Money, Credit and Commerce*, London, 1923; p. 20.

    We believe that now is a propitious time for such experiments, even for a large venture. Although we do not yet know enough about the relations of money and prices to forecast with precision the influence on the price-level of the suggested measure, we do know enough to be reasonably sure that the resultant price fluctuations would be small, compared with those which have actually occurred under all monetary systems which, like our present system, are not definitely devised to curb such fluctuations. And every experiment would add to our knowledge.

13. Chapter XVIII.
14. Pages 213–219; 228–234.
15. Note 1, Chapter XIII.
16. Pages 71–73.
17. Concerning indexes of employment correlated with indexes of production, see William A. Berridge, *Cycles of Unemployment*, Pollak Publication, Number 4, 1923. See, also, Note 1; Chapter XIII.
18. We agree with Professor Mitchell: "During this year [1921]," he

says, "millions of us were idle when we wished to work, billions of dollars' worth of plant and machinery stood unused when the owners longed to start their furnaces, and what we wanted to produce we needed to consume. The edict of enchantment which forbade us to do what we wished was pronounced by the money economy. We are periodically mastered by this social machinery we have made, and stand idle and needy at its bidding. For with all its efficiency the money economy has a fundamental defect — it warps the aim of our economic activity. What we want as human beings is to make serviceable goods. What we are compelled to do as citizens of the money economy is to make money. And when for any reason it is not profitable to make goods, we are forced to sacrifice our will as human beings to our will as money makers. That is the heart of the paradox.

"If I am right about this fundamental matter, I can hardly be wrong in taking an optimistic view of the future. For since the money economy is a complex of human institutions, it is subject to amendment. What we have to do is to find out just how the rules of our own making thwart our wishes and to change them in detail or change them drastically as the case may require. Not that this task is easy. On the contrary, the work of analysis is difficult intellectually and the work of devising remedies and putting them into effect is harder still. But one has slender confidence in the vitality of the race and in the power of scientific method if he thinks a task of this technical sort is beyond man's power." (Wesley C. Mitchell, in *The Stabilization of Business*, New York, 1923; p. 52–53.)

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